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No. 10

Increase in Hopper Infestation Seen by USDA Surveys

**Midwest Faces Big
Threat; Fewer Mormon
Crickets Predicted**

WASHINGTON — Grasshoppers may be on the increase during 1955, the U.S. Department of Agriculture warned, but Mormon crickets have apparently spread little and will probably need less control than in 1954. Results of surveys on these two major crop and rangeland pests, made during the summer and fall of 1954 by state and USDA entomologists, are presented in the Feb. 25 issue of the Cooperative Economic Insect Report, released by the department's Agricultural Research Service.

Biggest grasshopper threat to cropland appears to be centered in Missouri, southern Wisconsin, the Texas Panhandle and eastern Kansas. Fall surveys also showed a noticeable increase of hopper populations in northern Indiana, southern Iowa, eastern Nebraska, Minnesota, Oklahoma, and parts of Montana, North and South Dakota and Utah.

There is a build-up from last year
(Continued on page 4)

CSC to Participate in New Fertilizer Project in Canada

NEW YORK — Commercial Solvents Corp. will participate in a Canadian chemical project, it was announced March 3 by J. Albert Woods, president. The new company, known as Northwest Nitro-Chemicals, Ltd., will manufacture and market high analysis nitrogen and phosphate
(Continued on page 5)

Standard Oil of California Plans Fertilizer Plants

SAN FRANCISCO—The Standard Oil Company of California will begin a new chemical manufacturing program expected to call for an investment of as much as \$16,000,000, according to a recent announcement by T. S. Petersen, president of Standard.

Work is expected to begin in early March on basic processing units, Mr. Petersen said. The new processing units will include a new plant to manufacture ammonia and nitric acid, which will be constructed in Richmond, Cal., as a part of the company's general expansion in the field of chemicals derived from petroleum.

By-product hydrogen from existing oil refining operations will play a large part in the planned ammonia manufacture, according to Mr. Petersen.

The Standard subsidiary corporation, California Spray Chemical Corp., will also construct a fer-
(Continued on page 4)

Delaware Calls for Mosquito Spray Bids

WILMINGTON, DEL.—The Delaware State Highway Dept. will receive bids March 16 for the airplane spraying over the equivalent of 65,000 acres of marshland and for 50,000 gal. No. 2 fuel oil in connection with that spraying, according to W. A. McWilliams, chief engineer of the department. The spraying, for mosquito control, will be done as ordered between June 1 and Sept. 30.

Fertilizer Labeling Bill Passes Iowa House

DES MOINES—A bill to require a warning label on commercial fertilizers containing any harmful or poisonous substances was passed recently by the Iowa House of Representatives and sent to the State Senate.

Tariff Unit Members Split; German Potash Imports Unchanged

By JOHN CIPPERLY
Croplife Washington Correspondent

WASHINGTON — The U.S. Treasury Dept. Feb. 25 instructed Customs field officers to discontinue the withholding of appraisement of entries of muriate of potash from the Soviet Zone of Germany because of suspected dumping and to process entries of such merchandise without regard to any question of dumping.

The instructions were issued after notification by the U.S. Tariff Commission of an equally divided opinion in the first case certified to it by the secretary of the treasury under the Antidumping Act, 1921, as amended by section 301 of the Customs Simplification Act of 1954.

The divided opinion means that the Commission has not made an affirmative finding of injury, as required by the act for the imposition of dumping duties.

In the Commission's letter of notification, the three members who
(Continued on page 33)

Freeport Sulphur, Pittsburgh Consol Form Potash Firm

NEW YORK—A joint undertaking to produce potash from a substantial deposit near Carlsbad, N.M., was announced Feb. 28 by Freeport Sulphur Co. and Pittsburgh Consolidation Coal Co.

A new company, National Potash Co., has been formed to conduct the undertaking, according to the announcement by Langbourne M. Williams and George H. Love, respective presidents of the parent companies.

Richard C. Wells, Freeport vice
(Continued on page 3)

Inside You'll Find

Insect Notes	4
Over the Counter	17
Oscar and Pat	18
Bug of the Week	24
What's New	26
World Report	33
Editorials	38
Meeting Memos	39
Index of Advertisers	39

Spray Projects in Western Forests Hinge On Action by Congress

OGDEN, UTAH—More than 600,000 acres of timber in the Boise and Payette National Forests in Idaho will be sprayed by airplane this summer to kill spruce budworm, if Congress approves special appropriations for the project, forest service officials here have announced.

No invitations to bid will be sent out until Congress actually makes money available.

The new announcement brought up to more than one and one half million acres the amount of budworm spraying planned in western timber this year—all contingent on Congressional action.

Other planned budworm fights include 600,000 acres in Oregon and 300,000 acres in New Mexico.

Improved Pesticide Supply-Demand Balance Seen

By LAWRENCE A. LONG
Editor of Croplife

There will be plenty of insecticidal materials to fill the need for 1955; the carryover of materials from 1954 is not excessive; and the feared reaction from acreage allotments will not harm the pesticide industry this season! There are highlights of the replies coming back to Croplife from a questionnaire sent out to the pesticide trade in February.

In addition to the above conclusions, the key men in the trade to whom the questionnaire was directed, indicated a number of significant trends. They said that while the market for additional sales of pesticides through fertilizer-insecticide mixtures is not yet a big factor, it appears to be growing and shows promise for

the future. It was also established that many factors have mitigated against the "buy early" program to lessen its effectiveness, but at the same time it is regarded as a worthwhile project. Agreement was almost 100% on the need for dealer education in nearly every phase of the business.

The first question asked, "Does it

appear to you that the supply of pesticides for 1955 will exceed the demand?" Some 60% of those replying said that they look upon the supply situation as being a little more than adequate.

One eastern supplier commented, "It appears to us that the supply and demand of pesticides should be in better balance in 1955 than in a

number of years, unless some severe epidemic increases use far beyond expectations, or unusual climatic conditions appreciably decreases the use of pesticides."

Another manufacturer, located on the west coast, says "Even though some manufacturing facilities have been shut down and dismantled and others have not been running full-out, it appears the supply of pesticides for 1955 will be more than ample."

Most eloquent of all replies to the general marketing situation, however, was one from a Missouri tradesman who declared: "I would like to comment on one phase which we consider one of the industry's greatest problems," he says. "That is the increas-

(Continued on page 10)

300 Expected at NAC Spring Meeting

ST. LOUIS — An estimated 300 industry representatives are expected to attend the spring meeting of the National Agricultural Chemicals Assn. at the Hotel Chase here March 7-9. Top authorities from industry, college and government will appear on a program built around the theme "Better Farming with Agricultural Chemicals." Panel discussions are scheduled on herbicides, soil insecticides and the Miller Bill, according to Lea S. Hitchner, executive secretary of the association. Speakers will include W. W. Allen, Dow Chemical Co., NAC president.

Shell to Dedicate Ammonia Terminal

PASCO, WASH.—Ervin L. Peterson, assistant secretary of agriculture, will be the principal speaker at the dedication of the new Shell Chemical Co. anhydrous ammonia storage terminal here March 15.

Dedication of the facility will start at 10 a.m. with a tour of the terminal and an exhibit of latest equipment used in the application of NH_3 on farm lands.

Other speakers on the program will be Herbert G. West, vice president of the Inland Empire Waterways Assn., and George R. Monkhouse, vice president of Shell Chemical Corp.

The new storage terminal will make it possible for Shell to ship anhydrous ammonia by special tanker to Portland, Ore., from its California plant and then ship it up the Columbia by barge for distribution to the Washington and Oregon wheat country.

Committee Studies Burley Overproduction

LOUISVILLE — A sixteen man committee, composed of two tobacco men from each of the eight burley growing tobacco states, meeting in Lexington, Ky., Feb. 19, came up with a number of proposed regulations to stop what it called overproduction of burley tobacco.

The group announced that it had decided to ask Ezra Taft Benson, secretary of agriculture, to "take a new look at the burley tobacco supply situation and set 1955 production and marketing quotas on the basis of the existing situation."

John M. Berry, New Castle, Ky., chairman of the committee, later stated that Mr. Benson would be asked to call a meeting in Washington, to hear the committee's arguments for reduced production.

Among recommendations of the group for reducing burley production were more stringent controls on set-

ting and following acreage quotas.

The committee did not suggest changing the acreage controls to poundage controls. Previously, the Burley Tobacco Growers Cooperative Assn. suggested a poundage allotment of 1,800 pounds an acre.

Meanwhile, Sen. Earle C. Clements (D., Ky.), chairman of a recently-appointed tobacco sub-committee of the Senate Agriculture and Forestry Committee, said that the burley situation would be among the first to come under attention of his group. The sub-committee was appointed to study special problems of the tobacco industry.

POTATO MEETING

FARGO—Four North Dakota potato meetings on production and marketing problems have been scheduled in Mayville March 15, Grand Forks and Grafton March 16 and Cavalier March 17. Except Grafton, which is an evening meeting, the sessions are planned for 1:30 p.m.



William L. Garman

William L. Garman New Agricultural Service Head for Grand River

TULSA—Dr. William L. Garman has assumed duties as agricultural service manager for the Grand River Chemical Division of Deere & Co., at Tulsa. He will direct agriculture services in connection with company's new ammonia and urea plant located near Pryor, Okla.

From 1950 until his appointment with Deere & Co., Dr. Garman served in the Agronomy Department at Cornell University. He was born in Wagoner, Okla., and was graduated with distinction from Oklahoma A&M College, Stillwater, in 1939. Following graduation he worked for the U.S. Conservation Service in Texas and Arkansas. During World War II he served as a captain in the Air Force.

After the war, Dr. Garman completed his studies in agriculture at Oklahoma A&M and was awarded the M.S. degree in 1946. He then served on the staff at Oklahoma A&M as assistant professor of soil science until accepting a position in the Agronomy Department of Cornell University, Ithaca, N.Y. Later he obtained a leave of absence from Cornell University and obtained a Ph.D. degree in soil fertility and soil chemistry from Ohio State University.

Dr. Garman has contributed numerous articles and bulletins on agricultural subjects to scientific and general agricultural publications. He recently revised the second edition of the textbook "Using and Managing Soils" by the late A. F. Gustafson of Cornell.

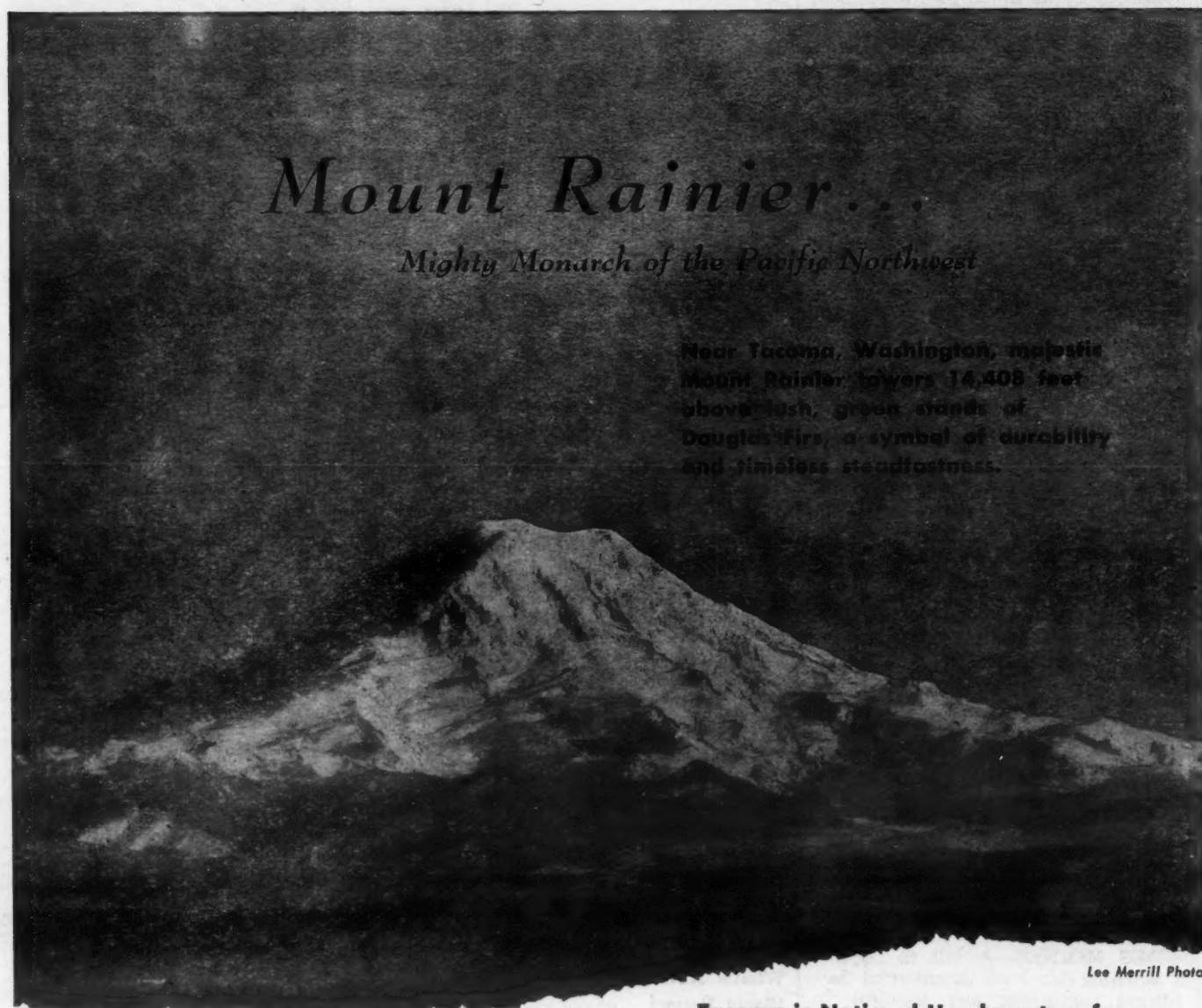
Pear Blight Control Ordinance Urged

SACRAMENTO — The El Dorado County Board of Supervisors has requested Jack Winkler, district attorney, to prepare the preliminary draft of a county ordinance making it a misdemeanor to fail to clean up pear blight.

Action was taken by the supervisors after Lowell D. Mobley, county agricultural commissioner, reported there was a great deal of blight, both in commercial orchards and elsewhere. A county ordinance was suggested when Mr. Mobley explained that abatement proceedings under the agricultural code were expensive.

Iowa Fertilizer Sales Top 600,000 Tons

DES MOINES—Fertilizer sales in Iowa during 1954 totaled 633,037 tons, according to a report by Clyde Spivey, state secretary of agriculture. This includes 197,748 tons of material and 435,289 tons of mixed fertilizer. Most popular grade was 5-20-20 with sales of 64,495 tons, followed by 10-10 with 45,177 tons.

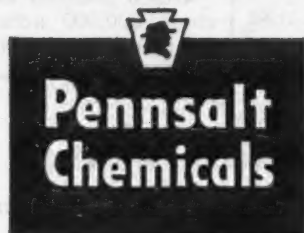


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Columbia-Southern Elects Two New Vice Presidents

PITTSBURGH — Columbia-Southern Chemical Corp. has announced the election of Robert L. Hutchison and Joseph A. Neubauer as vice presidents for the firm.

Mr. Hutchison, formerly general manager of operations for the firm, was elected vice president in charge of operations. He also was elected member of the firm's board of directors.

As a director, he succeeds Dwight Means, vice president. Mr. Means recently reduced his work schedule to a half-time basis and resigned as member of the firm's board of directors. He continues with the firm as a vice president serving in consulting capacities.

Mr. Neubauer, formerly technical director for the firm, has been elected vice president in charge of research and development. He also is a member of the firm's board of directors.

Mr. Hutchison joined the firm during 1925 as a draftsman at the Barberton, Ohio, plant. He held various positions in the experimental engineering department, later had charge of maintenance and construction and finally supervised all engineering at Barberton.

He was superintendent of the large chemical producing plant at Barberton from 1940 until 1947 when he was appointed general superintendent for the firm. He was named general manager of operations earlier this year. A native of Aberdeen, Scotland, Mr. Hutchison is a graduate of Gordon's Technical College at Aberdeen.

Mr. Neubauer joined Columbia-Southern as a chemical engineer at the Barberton plant during 1933. He was appointed construction engineer at Natrium, W. Va., plant during 1941 and served as plant superintendent when the facility went into production in 1943.

During 1946 he was named technical advisor for Columbia-Southern and in 1949 was appointed technical director for the firm. He was elected to the firm's board of directors last year. A native of Cleveland, Ohio, Mr. Neubauer is a graduate of Case Institute of Technology with the degree B.S. in chemical engineering.

Monsanto Chemical Establishes New Surfactant Sales Group

ST. LOUIS — Establishment of a new product sales group to handle all surfactants, and the creation of a new section to coordinate sales of phosphate and surfactant products with the production effort in Monsanto Chemical Co.'s Inorganic Chemicals Division was announced here recently by Tom K. Smith, Jr., division director of marketing.

At the same time, Dr. Louis Fernandez, St. Louis, was named manager of surfactant sales, and Herbert V. Yeagley, St. Louis, was named manager, sales-production liaison. Both appointments are effective immediately.

The new product group will handle such products as alkyl benzene, the various forms of Sterox and Sanomerse and other surface active agents manufactured by the division. Sales of sodium phosphates will remain in a product group under Thomas F. Gogan as product manager.

Mr. Fernandez, a native of Ohio, joined Monsanto in 1949. He has been director of technical service for the sodium phosphate and surfactant sales group. Mr. Yeagley joined Monsanto's Organic Chemicals Division in 1942.

API Plant Pest Control Meeting Dropped for 1955

AUBURN, ALA.—The Plant Pest Control Conference of Alabama Polytechnic Institute will not be held this year. This decision was made because the prolonged drouth made 1954 a poor research year, and representatives of industry and of the API Agricultural Experiment Station felt that a 1955 program would be a repeat of the 1954 session, with no significant data on new developments. A program committee has already been set up for the 1956 conference.

CROP GROUP ELECTS

CLEMSON, S.C.—J. Warren Tinsley, Laurens, has been elected president of the South Carolina Crop Improvement Assn. for the coming year. B. E. Gramling, Gramling, the retiring president, is the new vice president, and Robert H. Garrison, Clemson, is secretary. These officers with Dr. W. J. Neely, Hartsville, are the members of the association's executive committee.



PACIFIC COAST BORAX SALES MEETING—About 60 persons attended the recent week-long annual sales conference of the Bulk Sales Dept. of the Pacific Coast Borax Co., Division of Borax Consolidated, Ltd. The session was held in Death Valley, Cal., and attendance included representatives of the Agricultural Sales Division, Industrial and Plant Food Divisions. Shown above are J. F. Corkill, center, vice president, bulk sales, who was general chairman of the conference; and K. D. Lozier, left, St. Regis Paper Co., New York, and G. J. Buerman, right, Ferro Corp., Cleveland, both of whom were guest speakers.



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INSECT AND PLANT DISEASE NOTES

Wisconsin Reviews Insect Situation

MADISON, WIS.—A number of particular problems faced Wisconsin entomologists during 1954, according to the year's summary recently released by E. L. Chambers. He reported that the corn earworm again held first place as a corn pest appearing much more abundantly than usual and causing widespread damage to sweet corn, field corn and other crops.

Grasshopper populations are also building up over most of the state, he reports. Serious damage resulted in 1954 in a dozen north central counties where drouth conditions favored developments and egg surveys reveal a potential threat over much of the State next summer.

European corn borer, the population of which has been on a continued decline since 1949 showed only a very slight increase in average, 28 borers per 100 stalks in 1954. Considerable stalk breaking was experienced in eastern and north central counties.

Armyworms which were extremely

destructive in half a dozen counties in 1953, appeared abundant in many counties of the state in 1954 but were brought under control by their natural enemies in most cases before large scale control programs were put into action. White grub infestations were unusually heavy throughout the State causing serious damage to corn, truck crops and small fruit plantings. Meadow spittlebug continued to be one of the most serious pests to hay and small fruit plantings.

Potato leafhopper has become one of the major pests not only to potatoes, alfalfa and beans but to small fruits and other crops. Apple maggot was more abundant and destructive than usual in 1954 and created a serious hazard because of the many neglected and improperly sprayed farm orchards in commercial growing areas.

The most serious forest pest appeared to be the forest tent caterpillar which infested a dozen counties in the important tourist area of northwestern Wisconsin. While natural enemies appeared to have reduced the population in the extreme northern area after three years' dam-

age, the pest is gradually spreading southward.

Iowa's Corn Borers Numerous in 1954

AMES, IOWA—Iowa State College entomologists report that in 1954, European corn borer populations and damage reached the second highest level recorded, being exceeded only by those of 1949. The infestation expanded from a 1953 fall population of 163 borers per 100 plants (an estimated average of 19,560 borers per acre). Winter survival was high, 83.2% compared with an average survival of 73.2%. The average population of borers per acre in the spring of 1954 was 6,240, more than a five fold increase over the previous spring. Seasonal conditions for borer development in central Iowa were good.

Emergence of first brood moths was high and conditions for oviposition were good. In central Iowa, a total of 4,110 moths was taken in six light traps during the spring flight compared with 1,452 under comparable conditions in 1953. Egg counts ranged from 15 to 400 masses per 100 plants, with an average of 162. Based on eggs deposited and resulting larvae that matured, field survival of this generation was 4%.

Second-generation moth flight was heavy, 31,307 moths being taken in six traps as compared to 10,336 in 1953. Egg mass counts for this generation ranged from 20 per 100 plants to 1,190, with an average of 608. Second generation survival was estimated at 5.4%.

In southern Iowa population trend followed those of central Iowa, but at a lower level.

Corn earworm caused heavy damage over State. Cutworms were very destructive in scattered local areas, mostly in southern half of State. Populations averaged $\frac{1}{2}$ to 1 per hill of corn. Variegated cutworm was abundant in alfalfa in south half during May and early June, ranging from 2 to 15 per square foot.

Armyworm—Scattered infestation in northern counties. In infested bluegrass averaged 5 to 6 per square foot. Heavy, general infestation of grasshoppers in southern part during hot dry period; 10 to 20 per square yard in hay and pasture, 15 to 5 per square yard in fencerows.

Two-spotted spider mite caused heavy damage to corn, soybeans and red clover in spots, mostly in central counties; 50 or more mites per square inch not uncommon but timely rain checked damage.

Corn rootworms infestation normal (10 to 75 per hill), but less plant lodging than usual due to dry weather. Wireworms increasing in importance, seriously destructive only in local areas; as high as 75 taken from a single bait trap.

USDA SURVEY

(Continued from page 1)

on some western rangelands. Some six million acres of range may require grasshopper control in Montana, New Mexico, Oklahoma, Texas, Colorado, Arizona, Oregon, California, Wyoming, Utah, Kansas, Washington, Idaho, Nebraska and Nevada.

The entomologists report that drouth since 1950 has increased grasshopper problems in much of the Midwest and West. However, in some parts of New Mexico and Texas the weather has been so dry that even grasshoppers could not survive.

Mormon crickets threaten only about 83,000 western acres, more than half of them in Montana. Small spot areas in Colorado, Idaho, Nevada, Utah and Wyoming will also warrant baiting to limit spread of these insects.

Entomologists credit much of the reduced threat of cricket damage to improved surveys and control methods. Following their natural cycle and aided by drouth, the insects normally would be on the upswing now. However, for the past two years airplanes have been used to spread insecticide - treated, steam-rolled wheat over the crickets' remote mountain breeding grounds. This has killed most of the crickets soon after hatching, before they could band and invade crops, according to USDA.

STANDARD OIL

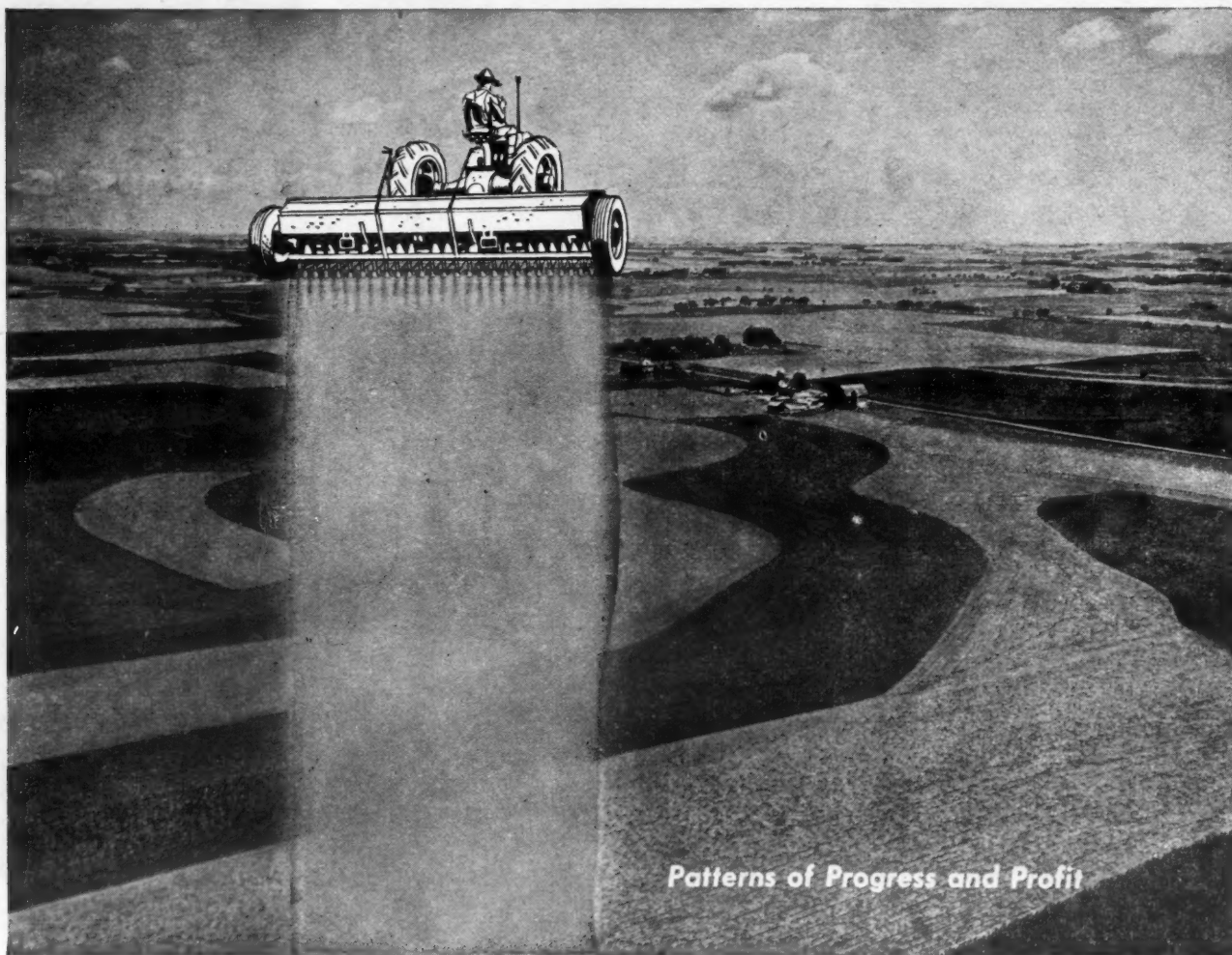
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fertilizer plant to convert a substantial portion of Standard's ammonia-nitric acids output into agricultural fertilizers.

The balance will be marketed to industrial consumers through Oronite Chemical Co., still another subsidiary of Standard Oil of California.

The combined facilities of the plants when completed will be about 300 tons of ammonia per day, Mr. Petersen estimates. California Spray-Chemical will manufacture this ammonia into plant foods in both pellet and liquid form.

Engineering work on the new plants is expected to begin during March, with completion scheduled for the middle of next year.



Patterns of Progress and Profit

(Photo—Courtesy Soil Conservation Service, U.S.D.A.)

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Robert S. Thompson

Robert S. Thompson Named President of Thompson-Hayward

KANSAS CITY — C. T. Thompson has elected chairman of the board of the Thompson-Hayward Chemical Co., Kansas City, by the board of directors of the company recently succeeding him as president of the firm is Robert S. Thompson, who has been executive vice president.

Other officers are Fred M. Gooden, executive vice president; Frank Vanavanah, vice president; L. S. Deley, vice president in charge of research, and Robert Ballinger, secretary. Directors named Nolan Franz as treasurer and Carroll McCue as controller and member of the board. Earl Liem also was elected to the board.

CSC PLANT

(Continued from page 1)

chemical fertilizers.

Associated with Commercial Solvents in this venture will be New British Dominion Oil Co., Ltd., along with Ford, Bacon & Davis, Inc., and Frank McMahon of Alberta. Northwest Nitro-Chemicals will be operated by Commercial Solvents under long term management contract. In addition to the investment by Commercial Solvents and its associates in the new enterprise, the investment banking firm of Eastman Dillon & Co. proposes to raise the balance of the necessary funds through public sale of debentures and common stock, as well as the private placement of mortgage debt.

The project will be located in southern Alberta. Consumption of the products will be in the fast growing agricultural areas of the prairie provinces of Canada and in the northwestern U.S.

Northwest Nitro-Chemicals will be supplied with natural gas from the Gazikom Gas Reserve owned by New British Dominion Oil Co., Ltd. and Con Oil & Gas Co. The prime contractor will be Ford, Bacon & Davis, Inc. of New York City, with Commercial Solvents serving as consulting engineers. Construction is expected to begin shortly, with completion scheduled for the latter part of next year.

H₂ Price Reduction

SAN FRANCISCO — Shell Chemical Corp. last week announced a 1¢ lb. reduction in its price of anhydrous ammonia in eastern Washington and Oregon. The reduction is the second since the firm opened its waterway route to distribute anhydrous to the area, via Pasco, Wash.

Rain Brightens Farm Outlook In the Mid-South

MEMPHIS — Rains over much of the Mid-South halted farm operations, but much planning for crops was done, according to extension officials in their weekly reports.

Mississippi extension specialists said heavy rains halted land-breaking, but pointed out that the mild weather aided the growth of home gardens and grazing crops.

Fruit tree growers were reminded by Chesley Hines, extension horticulturist, that trees should be sprayed for control of San Jose scale before fruit and leaf buds begin to swell.

C. A. Vines, associate director of the Extension Service in Little Rock, Ark., said Arkansas farmers have been doing considerable work and planning toward constructing more

on-the-farm storage facilities for soybean production.

He had earlier predicted that farmers in East Arkansas particularly will turn to more soybean production this year because of reduced cotton and rice acreage quotas.

He reported stockponds and reservoirs are in "good shape" now as a result of the rains and snows this winter, but underground water levels still are low.

Farmers are beginning to do some gardening. Land-breaking continued and there was a general increase in planning for this year's crops, he said.

Pakistan Allotment

WASHINGTON — Pakistan has been allotted \$165,000 to buy agricultural pesticides from U.S. sources. Procurement can start at any date, but delivery must be made not later than June 30, 1955.

Georgia Farmers Still Fighting Drouth Effects

ATLANTA — Georgia farmers, fighting back after the worst drouth in the history of the state weather bureau stations, aren't out of the woods yet.

Although rains by now have given good soakings to virtually every part of the state, continued cold weather has so slowed pasture growth that many farmers are still faced with serious livestock feed problems.

Spring-like weather recently has kicked off a pasture growth to some extent.

CORN BORER SPREADS

FARGO — The corn borer chewed its way into two additional North Dakota counties—Dunn and Grant—during 1954, according to North Dakota Extension Service.

9 out of 10 growers who treat for soil insects use aldrin

aldrin formulations pay!

When rootworms and other soil pests hit the corn belt, it's a safe bet that growers will use aldrin. By killing rootworms quickly and easily, aldrin has won the position of No. 1 soil insect control.

Aldrin gets the other soil pests too! In addition to rootworms, aldrin gives the same outstanding control of wireworms, white grubs and others.

Since aldrin is compatible with most farm chemicals, it can be mixed readily with fertilizers. Many growers prefer to save labor by applying aldrin in an aldrin-fertilizer mix. Or, it can be applied as a row or broadcast spray. More and more growers will be using aldrin, so be sure you have adequate supplies.

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Moisture Supply Big Question Mark For Texas Farmers

BIG SPRING, TEXAS — Texas farmers are more hopeful than they have been in several years, but are anxiously watching the weather signs. A lot of rain fell during the winter, first in one section, then another. However, no large area received more than three or four inches altogether. There is still some moisture in the soil, but with cloudless days and the west winds beginning to rumble, farmers know more moisture must come before planting time.

Small grain pastures in West Texas are at a standstill and furnish little grazing. Plowed land is drying out, and of course ranges are so bare that ranchers don't expect any grass for another two or three years.

Irrigation wells have gone down

steadily for several years, and are now being put down frantically by dryland farmers. Hundreds are being drilled every week and few of them are plugged. If a well tests only fifty gallons a minute, the owner puts a small electric motor on it and uses it. Many of these little wells paid for themselves last year with one crop. By using fertilizers and insecticides, farmers often made two bales of cotton per acre on irrigated land, while dryland farmers produced less than a fourth bale to the acre.

At present, irrigation farmers are busy applying a pre-planting watering. Also many of them are putting down anhydrous ammonia.

Dryland farmers are waiting and hoping. Rain used to fall in West Texas. Maybe it will again in 1955.

SWISS SULFUR IMPORTS

ZURICH — Switzerland has abolished, effective Feb. 17, import licensing requirements for sulfur, which have been in effect since 1951.

Serious Weed Problem Seen in Colorado

FORT COLLINS, COLO. — A serious problem of weed control in 1955 has been forecast by Rodney Tucker, Colorado A&M Extension agronomist. Perennial weeds become more troublesome during and following a dry year, he points out. This is true on irrigated as well as on dry land.

Perennial weeds such as Canada thistle and bindweed are deep-rooted. They have the ability to reach deep into the soil for their moisture. Thus, many Colorado ranchers and farmers will find that patches of perennial weeds have spread and become more vigorous.

NEW MEXICO MEETING

STATE COLLEGE, N.M. — Three district fertilizer meetings have been scheduled by New Mexico A&M College. They will be held at Aztec March 8, Espanola March 10 and Las Vegas March 11.

George B. Beitzel, Pennsalt President To Retire Soon

PHILADELPHIA — George Beitzel, president of the Pennsylvania Salt Manufacturing Co., has been pressed to the board of directors to desire to retire as chief executive later this year when he completes 25 years' service with the company.

At the same time, he recommended that William P. Drake be appointed executive vice president and elected to board membership. Both recommendations were approved.

"Mr. Drake's appointment as executive vice president," Mr. Beitzel said, "makes possible a gradual and orderly transfer of responsibility the interim, and will enable us to carry forward our projected expansion program according to schedule."

Commenting on these developments, Leonard T. Beale, board chairman, stated: "Pennsalt experienced unparalleled expansion during Mr. Beitzel's tenure, and it is only natural that the Board was reluctant to cede to his wishes. We are grateful for his important contribution to the success of our enterprise over the past 25 years and look forward to his counsel for many years to come."

While only 42 years of age, Mr. Drake has been a member of the Pennsalt organization for 21 years. He was first employed as a student trainee during summer vacation while still studying at Bowdoin College.

After three years of technical training in several of the company's industrial chemicals plants, he was signed to the sales organization. From 1941 to 1949 he served successively as sales manager of the chemical specialties department, assistant vice president and vice president in charge of sales.

Mr. Drake became president of Industrial Chemicals Division in March, 1954, when expansion of the consolidated company led to the formation of two new major operating divisions.

Mr. Beitzel became the 13th president of this 104 year old company in 1949. He was the first chief executive to be selected from the sales organization. A native Philadelphian, he attended the University of Pennsylvania, and began his business career with the Commercial Trust Co. of Philadelphia. He joined Pennsalt following an association with the Yarnall Paint Co. of which he was vice president.

Fertilizer Aids Big Cotton Yield

EL PASO, TEXAS — Farmers in the Upper Rio Grande Valley realize that crop rotations help soil fertility but they are also learning that commercial fertilizers must be used to get the highest yields. The best cotton production record so far is that of Jack and Kent Deputy who made an average yield of 2.6 bales per acre.

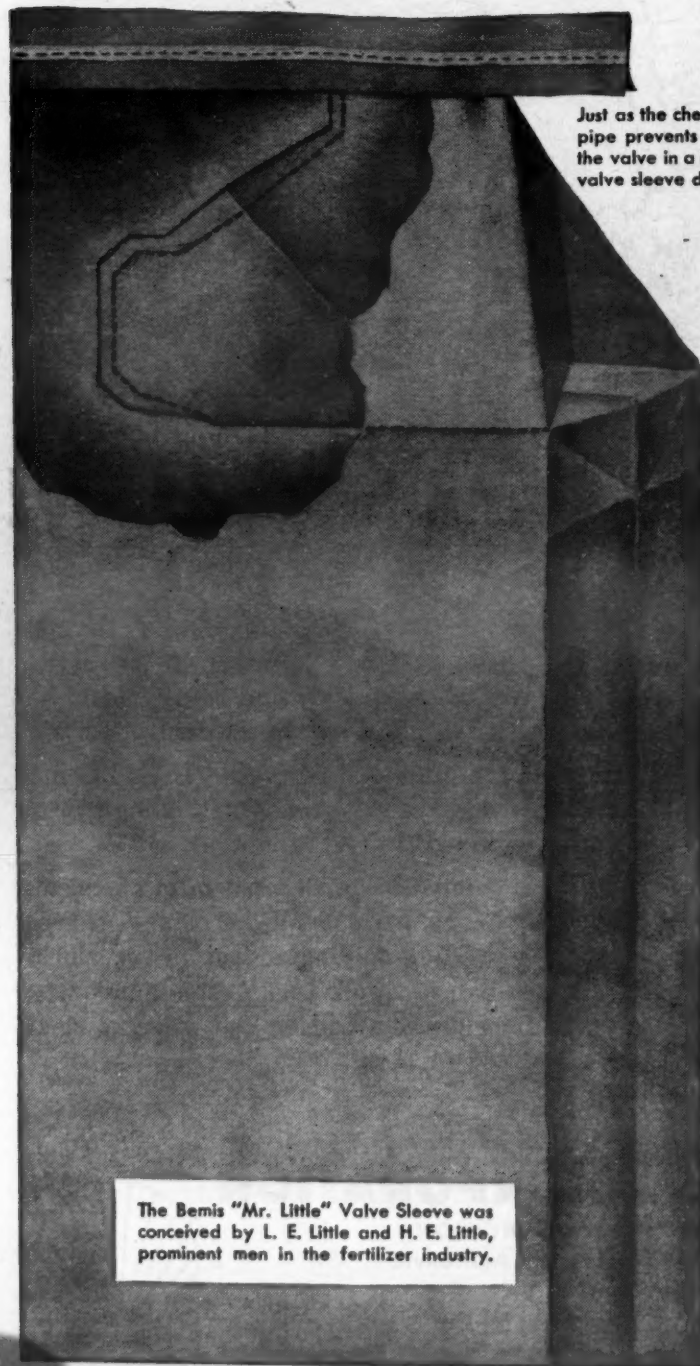
This was grown on land that has been in cotton for 12 straight years. They point out that the high yields were made because of a good cotton year and nitrogen fertilizer, which they applied at the rate of 82 pounds per acre.

On 36 acres they harvested 94 bales of short staple cotton. This is near an all time record for the area around El Paso.

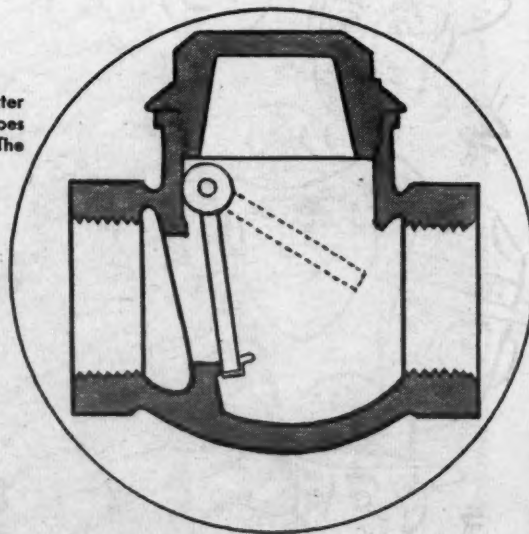
Federal Dividend

LOUISVILLE — Federal Chemical Co. directors have declared a dividend of \$1 a share, payable March 24 to owners of record Feb. 24. A dividend of the same amount was declared at this time last year.

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The Bemis "Mr. Little" Valve Sleeve was conceived by L. E. Little and H. E. Little, prominent men in the fertilizer industry.

Time to sell the new antibiotic crop saver

Agri-mycin* 100

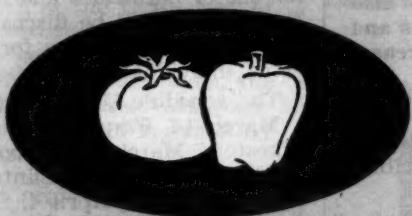
FIRST EFFECTIVE CONTROL FOR



WILDFIRE AND BLUE MOLD of tobacco

(*Pseudomonas Tabaci*) and (*Peronospora tabacina*)

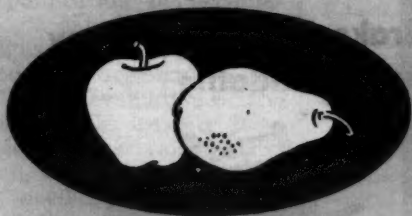
When used as a plant bed spray starting at the 2-leaf stage, Agri-mycin 100 not only controls both diseases, it also promotes a healthier, more vigorous root system. Used also for field spray.



BACTERIAL SPOT of tomato and pepper

(*Xanthomonas vesicatoria*)

Last season, Florida tomato and pepper growers used it to save the crop of thousands of acres threatened by an epidemic of bacterial spot disease. Agri-mycin 100 is recommended for use in seedbeds.



FIREBLIGHT of apple and pear

(*Erwinia amylovora*)

Use on more than one hundred thousand trees has proved that spray program started at 30% bloom stage can save the crop and the trees. Does not affect fruit set or cause russetting of fruit.



BLACKLEG AND SOFT ROT of potato

(*Erwinia atroseptica*) and (*Pseudomonas fluorescens*)

Used as dip for heavily infected seed pieces, Agri-mycin 100 insures a full, healthy stand.

Also a fast, proved control for walnut blight, for bacterial wilt of chrysanthemums, and for bacterial leaf rot of philodendron.

These diseases, some never before successfully controlled, can now be sprayed away with Pfizer's great, new antibiotic combination, Agri-mycin* 100. Agri-mycin 100 is the only antibiotic spray that contains both streptomycin and the wide range antibiotic, Terramycin* to prevent development of resistant strains and help make the streptomycin even more effective.

Agri-mycin 100 fills a need in the orchard, vegetable and tobacco disease prevention program met by no other product. News that Agri-mycin 100 is now available through suppliers of agricultural spray materials will reach orchardists, tobacco and vegetable growers this spring. They're reading about it, talking about it, want it. Be ready to supply it.



One bottle makes from 50 to 400 gallons of solution depending on the application. Agri-mycin 100 is a non-corrosive, non-clogging, wettable powder for use in a regular spray equipment.

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FERTILIZER BORATE-High Grade, because of its higher analysis ... and lower moisture content (5 mols) ... saves you important money. In formulating mixtures containing borax, only 82.9 lbs. of FERTILIZER BORATE-High Grade are required for each 100 lbs. of Borax that you guarantee. You figure the savings!

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you can offer for
specific needs

COLEMANITE-High Grade...a slowly soluble lime borate for light and porous soils, or in regions of high rainfall. Content of B_2O_3 ranges from 32% to 35%. *Bulletin PF-2.*

POLYBOR-2...Highly soluble. Contains 20.5% Boron or 66% B_2O_3 . Applies as a spray or dust; compatible with insecticides and fungicides currently in use and may be applied in the same solutions. *Bulletin PF-4.*



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NEW POTASH FIRM

(Continued from page 1)

president and controller, will be president of National Potash. Thomas G. Ferguson, formerly a vice president of one of Pittsburgh Consol's divisions, will be operating vice president of the new company.

The project, including mine, plant and related facilities, will call for an estimated capital outlay of \$19,000,000. National Potash has arranged to borrow \$12,500,000 from an insurance company, and Freeport and Pittsburgh Consol will each supply half of the remaining capital requirements. The facilities will be designed to produce potash containing the equivalent of approximately 250,000 tons of potassium oxide per year.

Pittsburgh Consolidation Coal Co. is a producer of bituminous coal. Last year it produced more than 22,500,000 tons of coal from its wholly owned or associated mines in West Virginia, Kentucky, Ohio and Pennsylvania.

Freeport Sulphur Co. is a producer of sulphur, operating mines in Louisiana and Texas. It is currently producing oil from fields in four states, and it has interests in other minerals.

The area in which National Potash will conduct its operations in New Mexico is about 32 miles east of Carlsbad on the Lea and Eddy county line. The company has taken over potash leases awarded Freeport by the Department of Interior on 12,775 acres. It also has taken over federal permits and state leases on additional acreage.

Freeport discovered the potash deposit in exploratory drilling begun in 1949. Some 60 core tests, involving more than 100,000 feet of drilling, have been completed.

About two years will be required by National Potash to sink shafts,



Richard C. Wells

To Head National Potash

build a refinery and related facilities and install a 21-mile water pipeline. Production is scheduled to begin in 1957.

Pesticide Meetings Scheduled in Missouri

COLUMBIA, MO.—A series of district meetings has been arranged at which the University of Missouri College of Agriculture recommendations for use of herbicides and insecticides during 1955 will be discussed. These will be open meetings for all interested individuals.

The schedule is as follows:

March 14, Farmington; March 15, Sikeston; March 16, Cabool; March 17, Rolla; March 19, Clinton; March 30, Mt. Vernon; April 4, St. Joseph; April 5, Chillicothe; April 6, Kirksville, and April 7, Mexico.

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Advisory Committee Asks for Expanded Fertilizer Research

WASHINGTON—The Soils-Water-Fertilizer Research Advisory Committee of the U.S. Department of Agriculture in its meeting this year has developed recommendations for research in (1) basic soil-water-plant relationships, (2) soil-plant-animal nutrition relationships, (3) fertilizer improvement, (4) watershed research and (5) soil and water improvement research.

Soil-water-plant relationships—(1) initiate research on the fundamental aspects of soil structure that affect the production of crops; (2) initiate comprehensive study of the complex interrelation of factors which influence the movement of water into and through soils; (3) expand present work on soil organic matter and nitrogen availability to include studies on how organic matter functions in the improvement of soil structure, water penetration and root extension, and initiate studies to determine why some nutrients tend to become "fixed" in the soil and are only slowly released to plants.

Soil-plant-animal nutrition relationships—(1) In view of increasing industrialization, initiate studies of contaminants on soils, plants and animals; (2) expand studies of minimal interrelationships in animal nutrition.

Fertilizer improvement—Under-
take research in the technology of fertilizer-pesticide mixtures, including the compatibility of pesticides with fertilizer materials, the preparation of mixtures having uniform composition, and the stability of the mixtures.

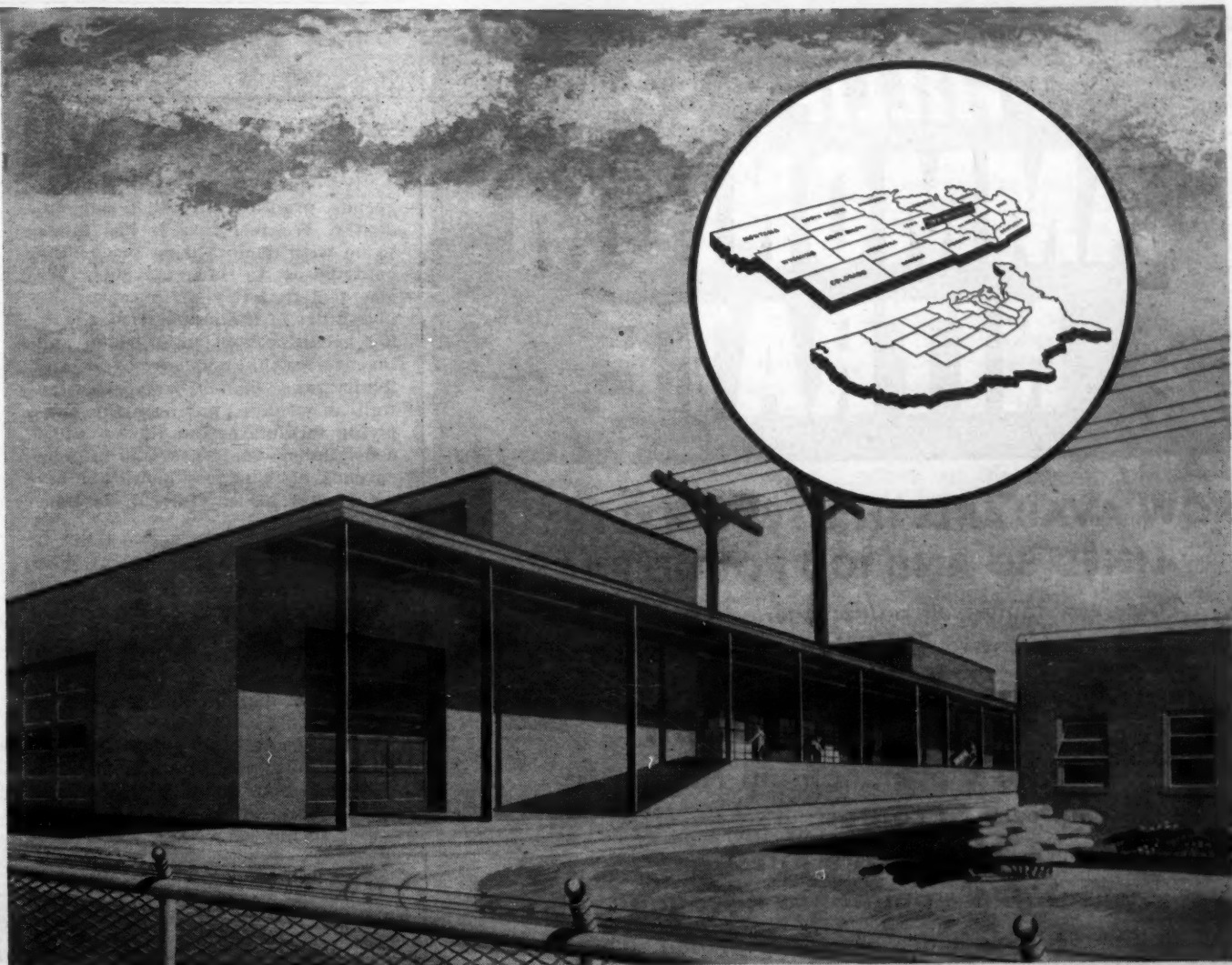
Watershed research—The committee reiterated its recommendation of last year; (1) that there is pressing need for intensive analysis, interpretation and publication of accumulated hydrologic data; (2) that generalized designs be adapted for discharging flood flows over and around dams and (3) that evaluation of the damages and possible benefits from deposit of sediment on valley floors be undertaken, but only where there is imminent need for this type of data in evaluating costs and benefits of flood control structures.

Soil and water management research—The committee recommended: (1) expansion of humid region irrigation research, (2) expansion of arid region drainage research and (3) repeated its recommendation of last year that further research is needed on the integration on a field and farm unit basis of various soil, water and related practices into practical systems of conservation farming with the department encouraging state agricultural experiment stations to start this work).

Committee members attending the meeting were Wayne M. Akin, Western Farm Management Co., Phoenix, Ariz.; Russell Coleman, National Fertilizer Assn., Inc., Washington, D.C.; J. Lewis David, Corsicana, Texas; J. M. Dwyer, Weymouth, Mass.; Clair P. Guess, Jr., Denmark, S.C.; J. W. Horner, Horner & Shifrin, St. Louis, Mo.; Lester F. King, Helix, Ore.; D. F. Peterson, Jr., Colorado State College, Fort Collins, Colo.; Norman J. Volk, Purdue University, Lafayette, Ind., and James J. Wallace, Iowa State College Agricultural Foundation, Ames, Iowa. Carleton P. Barnes of the Agricultural Research Service is executive secretary of the committee.

Air Pollution Symposium Set

LOS ANGELES — A program of 13 technical papers has been established for the 3rd National Air Pollution Symposium to be held April 18-20 at the Huntington-Sheraton Hotel, Pasadena, Cal.



GEIGY PRODUCTS NOW AVAILABLE TO DEALERS, FORMULATORS AND MIXERS

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Phillips 66 Ammonium Nitrate is *prilled*. The small, coated pellets flow freely, resist caking, handle easily. This superior fertilizer is highly recommended for top dressing small grains, seed grasses; side dressing for row crops; preplant and broadcasting applications.

As a companion high nitrogen fertilizer for mixed goods, Phillips also produces Ammonium Sulfate (21% Nitrogen) in 80 and 100 pound bags.



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PESTICIDE SURVEY

(Continued from page 1)

ing menace of consignment sales of agricultural chemicals.

"We believe this is the most dangerous practice affecting our industry. We feel that it has much to do with demoralizing prices and contributes to low margins. We also feel that it contributes to the instability of the industry by creating credit, extension of sales and inventories that can only cause difficulty and demoralize prices as well as weaken, not only the supplying formulator but the so-called consignment customer who in turn extends his business operation beyond what his capital can sustain.

"We believe this practice must be stopped at the basic producer's door, and the greatest offenders are the so-called integrated and basic companies.

"We, for one, are firm believers in the fact that a man who pays cash or pays for merchandise on regular terms is entitled to a better price. It is an absolute certainty that the cost of consignment is in effect a price concession and any supplier can show a savings on sales made on regular terms."

Carry-Over from '54 Smaller Than Expected

For a number of years back, the carry-over of inventories has been a serious factor in planning production schedules in the pesticide trade. Is this phase of the business causing this year's program to start out under a handicap?

Croplife asked this question: "Does your company have much of a carry-over from the 1954 season?"

About 20% of those replying said that they have a big carry-over; 22% indicated their left-over inventory was "normal" or "average" and 58% said, happily, that they have a "low" or at least not a large stock on hand from last year.

One midwestern formulator told all in reporting that "We have a normal carry-over of pesticides, approximately 25% of our estimated volume. Approximately 90% of this is in the form of technical materials and 10% in the form of finished goods."

Another respondent wrote in that he has a sizeable carry-over on some items such as 2,4-D. Another firm comments optimistically that "Generally speaking, we are looking forward to a good year. So far, our sales of agricultural chemicals are ahead of last year's and we feel that this trend will continue."

Among those who report too much of a carry-over is an eastern firm which states that its left-over stock from 1954 is equal to about 60% of last year's sales.

The "childish price cutting, throat slashing methods of approach" to the problems of the industry were assailed by one questionnaire returner who observes further that "somebody must take the responsibility of steering this industry to the point that it approaches its merchandising and selling program in an adult manner. . . . It appears to me at this time that there is more confusion than normal, even though the prospects are better than normal."

Trade Looks at Mixes Of Pesticides, Fertilizer

In many states, the mixture of pesticides with fertilizers is becoming popular, and in some areas this practice is being recommended. There are admittedly many factors mitigating against this type of operation, however, particularly in matters of registration and labeling. Still the idea is spreading and is apparently

gaining in favor as ways are found to perfect the mixing of materials.

Naturally, the grower's interest in this type of material lies in his being able to apply both fertilizer and pesticide at one application, thus affecting quite a savings.

The attraction for the insecticide manufacturer and formulator lies, of course, in his finding an extra market with the fertilizer mixer in providing materials for this operation.

It was interesting to find from answers to the questionnaire, that quite a substantial number of those replying recognize this as a potential means of selling more materials.

To the question: "Do you expect to find an extra market through mixing various pesticides with fertilizers?", 28% gave a definite "yes" answer, and an additional 11% indicated that they were considering seeking such a market.

Here's what some of the tradesmen had to say on the subject: "We have already enjoyed a good market through the sale of pesticides to fertilizer manufacturers and anticipate that this volume will increase materially during the 1955 season." Another firm indicated that it expects to do some business with fertilizer manufacturers through a pre-emergence weed control preparation while still another speaks of his fertilizer-insecticide business as "growing, but still very small."

One west coast respondent comments that "We do not know whether mixing of pesticides with fertilizers will increase the overall use of pesticides. We would rather see each applied separately as needed."

Thus, if any conclusion can be drawn from the replies, it would be that the basic idea of mixing these two agricultural materials is not shrinking. Growth is slow, however, and progress will probably have to be measured over a period of years.

Reduced Acreages No Deterrent to Business?

Another factor which could affect the pesticide industry for good or ill, is that of reduced acreages on many basic crops in the U.S. Will this result in restricted use of pesticides in keeping with fewer acres? Or, will it make the crops grown on these areas so valuable that extra amounts of insecticides, fungicides and weed killers will be used to protect the plants?

There are apparently sound argu-

NEW CORROSION RESISTANT TANK

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Proven Superiority for
phosphoric acid fertilizer and
other highly corrosive
liquids

500, 200, 80 gal. sizes in stock
Other sizes available

Pacific Plastics Co.
2724 6th Place South Seattle, Wash.

ents on both sides, but there is certainly no doubt which way the pesticide industry sees it. Of those who replied to the CropLife questionnaire, 88% said that they do not intend to cut down production because of acreage restrictions.

The questionnaire asked: "Acreage allotments and the resultant reduction in many row crops has been regarded as a threat to pesticidal sales volume for 1955. Do you plan to reduce your over-all production to allow for such shrinkage?"

One firm, located in a cotton-growing area, answered in this way: "Of the crops affected by acreage allotments, cotton is the only one of importance as a pesticide market. Since the intensity of infestations extends over such a wide range, it is much more important factor than acreage allotments. There is no pre-empting infestations, so we plan an average year's program."

A middle-western company spokesman says, "We do not anticipate that acreage allotments will materially affect our sales volume in 1955 below that of 1954. Large carry-over and poor prices on some row crops could materially decrease the call for agricultural chemicals in these crops."

From the deep south comes this statement, "No, our production won't cut to allow for fewer acres under cultivation. We feel that each acre will be treated better to get maximum production." A neighboring competitor views the situation in a very similar light. He, also, plans to keep production because "allotments tend to increase demand for insecticides."

Another confident note is sounded from a northeastern company spokesman who says, "We feel confident that new uses and increased use of pesticides will more than offset any decline in use due to acreage allotments." His counterpart, also on the east coast, observes that acreage allotments will have little effect on shrinking pesticide sales "because farmers now want to grow more on each acre and we expect more thorough pesticide programs."

From the deep south comes a significant comment, particularly since pesticides for cotton pest control comprise a large portion of this firm's business. He says, "No, we don't expect to cut down production, because we believe that the acreage reductions will not affect pesticide sales materially, particularly as regards cotton insecticides."

Another southern firm, without elaborating further, merely said that their production would be reduced from the long-time average, but that would not be reduced further from the 1954 level. This meant, in effect, that recent acreage allotments would not have a bearing on their planning for 1955.

"Buy Early" Program Fails, Reports Indicate

Pesticide tradesmen still hopeful at the "Buy Early" program for the industry may some day succeed are apparently in the minority, if results of the current questionnaire are any criterion. Some 76% of the replies termed the "buy early" program a "complete failure," a "wash-out" or indicated that it "won't work."

At the same time, a few firms did report success in this line. These comprised less than 10%, however. One middle-western respondent said that "our stock orders are moving very satisfactorily" and another said that he "can't tell" whether the program is working or not. Another spokesman for a cooperative group says that farmers are buying early in this section. "Our cooperative pro-

notes an advance order program successfully," he reports.

More articulate, however, were those who reported negatively on the buy early program's progress. One prominent southern firm says that the effort has not worked in the past and "I do not think it will be successful because the farmers have been burned and burned badly for three years in a row by buying early."

Another spokesman, representing a basic manufacturer, observes that it is possible to sell dealers to a certain extent, but that the program receives a "very poor response" from farmers themselves.

From California, an insecticide manufacturer with many years of observation behind him, says that "Farmers and dealers seem thoroughly convinced that they can get what they need when they need it, so the buy-early program has failed rather completely."

Here is the comment of a mid-

western manufacturer on the subject: "The idea of getting dealers and farmers to buy early is an excellent one. We should say that a very slight progress has been made in this line. We certainly wish the buy-early program could be promoted further. However, with the plant facilities we have, we feel that we can handle adequately any emergency infestations in the area which we service."

"Dealers Need Help" Tradesmen Agree

The final question dealt with problems of education of local dealers on insecticide terminology, sales promotion ideas and other helps. Because the subject is one for discussion and comment, naturally, there was a considerable amount of both as is seen in the following excerpts:

"Dealers most certainly could be better educated than they are at present. We have no concrete suggestions, but any educational program you may devise should be helpful."

"You have carried several very useful articles relative to profit angle and cost of insecticides. I believe we should get some information to the producers about costs, overhead, transportation and storage."

Another comment suggested that "Correlation of insecticide terminology between designations of chemicals commonly used in the trade, and chemical names and designations employed by state and federal agencies in usage recommendations, would be very helpful to the entire trade."

Another respondent indicates that his dealers are "keeping abreast reasonably well." However, one trouble he points out is the failure of dealers to evaluate materials properly. He points out the case of 2,4-D where both butyl and isopropyl esters are available, but too many dealers buy the cheaper priced material, thinking it to be less expensive than the other.

Actually, however, this manufacturer points out, the unit cost of
(Continued on page 14)



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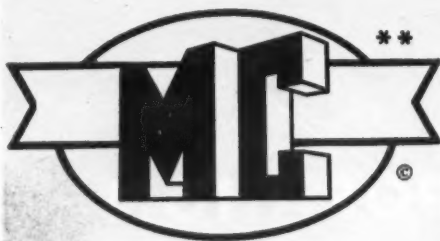
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Maryland Conference Hears Latest Word on Insect, Weed, Plant Disease Control Methods

BALTIMORE — More than 125 county agents and field men representing companies in the agricultural chemicals field, were present at the second annual University of Maryland Agricultural Chemicals Conference here Feb. 10-11. Discussions of current insect, plant disease and weed control methods were held, and recommendations for the use of chemicals during the coming season were made.

University of Maryland entomologists, plant pathologists, horticulturists and agronomists all took part in various phases of the conference, purpose of which was to

acquaint the county agents and fieldmen with the latest recommendations.

The subject of nematode control in vegetable crops occupied a considerable portion of the first day's program. Plant pathologists W. R. Jenkins and O. D. Morgan reported on results with soil fumigation at three locations in the state last year. A treatment of ethylene dibromide (EBD) Dowfume 85, broadcast at the rate of five gallons per acre, was made before planting cantaloupe, tomatoes, tobacco, sweet potatoes and peppers.

"In this demonstration," the

pathologists reported, "cantaloupes and tomatoes would have been a failure on untreated soil. On tomatoes, for example, the treated plants outyielded untreated plants by two baskets to one on the first, second and third pickings. Yield on the fourth picking was three baskets on the treated plot to 1.5 baskets on the untreated. The yields on the fifth and sixth pickings were four baskets to 1.5 in favor of treatment, and on the seventh picking treated plots yielded seven baskets to one for untreated."

Drs. Jenkins and Morgan concluded that in light soil where root-knot nematodes are a serious problem, soil fumigation is necessary to obtain satisfactory yields on susceptible varieties of vegetable crops.

The next discussion called for participation of pathologists and entomologists, since the topic was combination seed treatments for vegetables. In experiments last year all insecticides, whether used alone or in combination with a fungicide, resulted in

significantly higher stands of lima beans than untreated seed or seed treated only with fungicide.

Combination treatments also gave significantly higher stands of snap beans than fungicide treatment alone or untreated seed.

Extension entomologist T. L. Bissell presented the 1955 recommendations for control of insects on hay and tobacco crops. He reminded county agents and fieldmen that the alfalfa weevil has become a serious pest in Maryland the past few years and is still spreading. Experiments have led to the recommendation that the first cutting of alfalfa be sprayed twice for weevil control. Mr. Bissell said that two sprays on the first cutting have resulted in yields 12 to 70% greater than yields where only one spray was made on the first cutting.

Insecticides recommended by him for weevil control are heptachlor or dieldrin for the first spray on the first cutting, heptachlor or malathion for the second spray on the first cutting, and heptachlor on the second cutting.

Also emphasized in Mr. Bissell's general coverage of hay and tobacco insects was the tobacco hornworm. The entomologist recommended TDE rather than lead arsenate, the "old standby." He suggested that TDE be applied in a liquid spray, and that ground machines be used rather than airplanes.

Closing the first day's program was a discussion of spray residue problems in the light of the Miller Bill which establishes a new procedure for setting residue tolerances, and makes possible the setting of a maximum amount of pesticide residue permitted on raw agricultural commodities. A representative of the Baltimore district of the Food and Drug Administration led this discussion.

New fungicides for use on fruit trees was the subject for opening the second day of the conference. Extension plant pathologist L. C. Weaver recommended new treatments for powdery mildew and fire blight.

He said that in past years "we haven't had a good spray for fire blight. We had to keep the disease down as best we could with cultural methods and these did not give good control. The new material we are recommending is streptomycin sulfate, an antibiotic. It is still experimental, but everywhere we used it last year it controlled fire blight. So we are suggesting a spray just as the center blossoms open, and two following sprays at intervals of 7 to 10 days."

The other new fungicide, for powdery mildew on apples, is Karathane. Dr. Weaver said this material "works beautifully on powdery mildew. However, it will not control apple scab, so it must be added to captan or glyodin. Karathane is also compatible with ferbam, DDT, Rhothane and Aramite. It should be applied in pre-pink and continue through the first cover spray," he said.

Following Dr. Weaver's recommendations for new fungicides on fruit trees, Castillo Graham, extension entomologist, discussed new controls for fruit insects. "We have coasted along for several years without recommending any protection against scale insects," he said. "We can't take a chance on scale insects any longer, so this year we are recommending a dormant spray containing dinitro and superior oil."

In opening a discussion on hormone sprays for apple trees, Dr. A. H. Thompson of the department of horticulture pointed out that growers have been "hanging back on the use of systemics. They are afraid of over-thinning. But we in the department of horticulture are very confident in recommending systemics."



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When we go around the State and see the growers who consistently get a heavy set of apples, we recommend chemical thinner."

Materials recommended for thinning apples are naphthaleneacetic acid (NAAcid) and naphthaleneacetamide (NAAmide). NAAcid is suggested particularly for vigorous Golden Delicious trees. NAAmide is considerably milder in action than NAAcid, but has done an excellent job of thinning many varieties without foliage injury, he reported.

Dr. Thompson pointed out that many growers get no results from the use of thinners because they get "cold feet" and dilute the spray. "We have got to convince our growers of the importance of spraying at recommended rates, and getting thorough coverage of the trees," he added.

A panel discussion on general purposes sprays for fruits, gardens and ornamentals was included in the program. The specialists report receiving a great number of inquiries from some gardeners who can't follow the schedules recommended for commercial growers. "There is no general purpose spray to solve all the problems on all types of fruits, vegetables and ornamentals, but there is a good standard mix that will take care of a lot of troubles," they said. This standard mix, it was pointed out, contains 1½% wettable sulfur, ¼ lb. perham, ½ lb. DDT (50%), and ¼ lb. Methoxychlor (50%) in 25 gal. of water.

The conference closed with a review of recommendations for chemical weed control. Dr. Albin Kuhn, head of the agronomy department, started this discussion by stressing the fact that chemicals are just one of the means of controlling weeds. "While we are talking about chemicals," he said, "let's not overlook such cultural practices as good rotation, use of clean seed, cultivation of row crops and clipping of weedy plants."

Paul W. Santelmann, extension weed control specialist, was called upon to answer a variety of questions in Maryland weed problems. Special attention was given to Johnsongrass and wild garlic.

Mr. Santelmann pointed out that Johnsongrass has now spread to most of the counties in the State. "But I don't think it's so well entrenched that we can't eradicate it if we go all-out on a control program. I think if we go to work now, we can get rid of this weed."

Plant Food Meetings Planned in Idaho

BOISE, IDAHO—Charles Painter, soils specialist of the University of Idaho Extension Service, has announced March meetings for public discussion of plant food for Idaho soils.

The dates are: Boise, March 7; Twin Falls, March 8; and Idaho Falls, March 9.

Five men of the College of Agriculture will assist the soils specialist in presenting information about several subjects, such as soil tests, fundamentals of plant nutrition, sources of nitrogen, economics of proper fertilization and fertilization of dry land.

Roger Harder, agronomist, and Glenn Lewis, agricultural chemist, both of Moscow, will be on the northern Idaho programs. G. O. Baker, soils professor, Moscow, and Lee Painter, a research man at the Aberdeen Branch Experiment Station, will speak at the southern meetings. Representatives of the fertilizer industry will also take part. John Siddoway, a technician at the Teton Branch Station will speak at Idaho Falls.

Charles Painter said the meetings are primarily for fertilizer dealers, but all people interested in recommendations for Idaho soils are invited.

H. D. Wellington Joins Gilman Paper

NEW YORK—H. D. (Dean) Wellington, formerly with Bagpak Division, International Paper Co., has been appointed western sales manager of the Gilman Paper Co. and its subsidiaries, with offices in the Daily News Bldg., Chicago.

Mr. Wellington joined International in 1936 and in 1946 became sales representative for the Bagpak Division in the Middle West.

According to Harry C. Lawless, vice president and director of sales for Gilman, Mr. Wellington will spearhead a more intensive coverage of the Midwest.

Multiwall bags are manufactured by Kraft Bag Corp., one of Gilman's subsidiaries, both at St. Marys, Ga. and at Gilman, Vt. Main offices are at 630 Fifth Avenue, New York. Fletcher L. Munger, former western sales manager is now sales manager for Kraft Bag Corp., with headquarters in New York.

Beef Gains Boosted 58% by Fertilizing Native Grasses in Oklahoma Experiment

GUTHRIE, OKLA. — Researchers find that a fertilizer can make the western range green with more grass, golden with more seed and red with larger herds of beef cattle.

At Guthrie, Okla., beef gains were boosted 58% (from 84 to 133 lbs. per acre) by fertilizing the native grasses on cleared virgin brushland pasture, and 54% (from 52 to 80 lbs. per acre) by fertilizing eroded range that had been reseeded to native grasses.

Soil scientists H. A. Daniel of the

U.S. Department of Agriculture and H. M. Elwell of the Oklahoma experiment station carried out this cooperative experiment at Guthrie.

They applied 300 lbs. per acre of superphosphate drilled 4 inches deep, once every 3 years, and 33 lbs. nitrogen each May. Hereford steers were used to test gains and grazing capacity on the fertilized and unfertilized range.

Fertilizer increased seed yield 85% on the debushed range plots after the grazing season.

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BREA PLANT STARTED—Earth-moving equipment went to work recently on the 7½ acre site of a new ammonium nitrate plant to be operated by Brea Chemicals, Inc., Los Angeles, subsidiary of Union Oil Company of California. Shown inspecting the first steps of construction are, left to right: Jack Tielrooy, Brea's manager of development; E. A. Pellegrin, executive vice president of Macco Corp., Paramount, Cal., contractor handling plant erection and off-site facilities; and Homer Reed, Brea president. Process units for the plant will be supplied by the Chemical & Industrial Corp., Cincinnati. Brea will manufacture ammonium nitrate, in a "prill" form, for distribution to Western growers. The Brea ammonia plant, shown in the background, will provide the ammonia used in making the new products.

145 Bu. Yield Tops Louisiana 4-H Corn Production Contest

BATON ROUGE, LA. — Russell Hebert, Iberia parish 4-H Club member who grew 145.7 bu. corn on one acre of land, has the highest yield reported in the 1954 Corn Production Contest sponsored by the Chilean Nitrate Educational Bureau in cooperation with the Louisiana State University Agricultural Extension Service. He was winner in the alluvial soils division of the contest.

Winner in the bluff and terrace soils division was R. B. Trahan, Lafayette Parish 4-H member, with 132.5 bu. to the acre. J. I. Phillips, St. Helena Parish, placed first in the upland or hill soil division with 116.3 bu. to the acre.

A 4-H corn yield contest will be sponsored again in 1955 by the Chilean Nitrate Educational Bureau and LSU Agricultural Extension Service.

PESTICIDE SURVEY

(Continued from page 11)

the isopropyl ester is less because a considerably greater amount of the cheaper material would have to be used for the same weed control project. He points out that this type of information should be presented to the dealers continually.

In another letter, the dealer education problem is described as being "our biggest stumbling block." It suggests that more information on practical usage of pesticides on specified crops would be very helpful to dealers in his area.

Another indicates that although he does not know all of the answers, he has observed that pesticides are becoming increasingly more difficult for the average dealer to comprehend. "With most dealers, pesticides represent only a small portion of his business, so he feels he cannot afford to supply the technical help that is necessary to do a complete job."

Here are the comments of a tradesman who has made some very astute observations in the trade. He says "I think the information that comes out on new materials is adequate, since most of us learn by use and repetition. The discovery and advent of new insecticides makes greater the amount of information that we need to master the handicap."

"In other words, if they would stop inventing things for a couple of years so that everybody would get acquainted with the recent discoveries, this 'machine gun type' of bombardment of manufacturers, dealers and farmers of so many new materials (many different kinds of materials for the same use) would stop."

"This type of thing has brought about a confusion which makes it difficult to be well informed on new products. It actually gives you the jitters. Dealers are afraid to buy anything, because even before one crop season is completed, new materials make the ones they purchase obsolete, and he doesn't know if the new item is going to be a 'flash in the pan' or a new big seller."

"Likewise the manufacturer has his problems with stock, inventories, labels, etc. This rash of new materials is, in a way, too much of a good thing at one time."

Here is the comment of a prominent southern manufacturer. "Any one's guess is of little value at the moment. We need a season without drought to give us a sounder basis for evaluating inventories, and sales estimates generally. In the meantime I feel we must be guided more by the fact that only a small percentage of farmers are using pest control than by infestation carry-over reports."

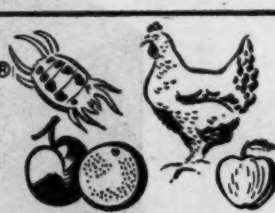




"If more farmers used a little, the volume would be as good as if a few continued to use a lot." We need a selling and educational program, and will for a long time to come."

A few further suggestions are offered by a midwestern manufacturer who says "Certainly all dealers need more information on insecticides, fungicides, and herbicides. Your series of articles 'Bug of the Week' has certainly been a great help. As a suggestion we might offer a series 'Insecticide of the Week' listing each week an insecticide showing the normal dosage required to control certain insects. In this connection, we would suggest using only the insects for which the particular insecticide is specific."

WORST WEEDS

TOPEKA, KANSAS — Bindweed ranks as the number one weed pest in Kansas, with Johnson grass a close second.

Naugatuck Agricultural Chemicals

product	application	advantages
Aramite miticide 	controls mites on citrus and deciduous fruits, cotton, other row crops, ornamentals and vine crops. Also controls poultry mites.	non-hazardous, low cost per acre, highly compatible, harmless to natural predators.
Spergon seed protectant 	controls soil fungi and storage insects (with DDT) on most crop and vegetable seeds.	effective at economical dosages, safe on seed, easy to use, compatible with most other chemicals including legume inoculants, low cost.
Phygon-XL fungicide 	controls fungus diseases on fruit trees and row crops.	extremely low cost per acre, easy to apply, compatible, harmless to pollen and bees.
MH growth retardant and herbicide <small>U.S. PAT. 2,614,916</small> 	inhibits grass growth; controls wild onions and quack grass; prevents tobacco suckering. Pre-harvest application prevents destructive storage sprouting of edible onions and potatoes.	extremely safe on plants; easy to apply; in wild onion control, one spray lasts up to 3 years.
Alanap pre-emergence weed killer 	Pre-emergence weed-control for vine, row crops; asparagus and nursery stock. Available commercially for use on vine crops.	safe on recommended crops, relatively non-toxic, easy to apply, favorably priced.



Naugatuck Chemical

Division of United States Rubber Company
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manufacturers of seed protectants—Spergon, Spergon-DDT, Spergon-SL, Spergon-DDT-SL, Phygon Seed Protectant, Phygon Naugets, Phygon-XL-DDT, Thiram Naugets, Thiram 50 Dust—fungicides—Spergon Wettable, Phygon-XL—insecticides—Synklor-48-E, Synklor-50-W—fungicide-insecticides—Spergon Gladiolus Dust, Phygon Rose Dust—miticides—Aramite—growth retardants and herbicides—MH-30, MH-40—pre-emergence weed killers—Alanap-I—blossom-setting compound—Duraset.

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Spring Fertilizer Conference of CFA Set for April 26

SAN MARINO, CAL.—The 1955 Spring Fertilizer Conference sponsored by the Soil Improvement Committee of the California Fertilizer Assn. will be held on the campus of the University of California at Davis April 26, according to an announcement by Sidney H. Bierly, executive secretary of CFA here.

The banquet will be held that evening at El Rancho Hotel, West Sacramento and will feature a nationally known speaker, he said.

The program will open at 8:40 a.m. with all delegates assembled in the Chemical Auditorium. Speakers during the morning will include Stanley Freeborn, provost; B. H. Jones, president, and M. E. McCollam, chairman of the Soil Improvement Committee, both of the California Fertilizer Assn.; Vern Frieman, agricultural agent, Whatcom County, Washington, on the Benedict Farm rehabilitation project; A. George Park, Balfour, Guthrie Co., Ltd., on California rangeland fertilizer demonstrations; Dr. Oscar A. Lorenz of the Agricultural Experiment Station, and Allen B. Lemmon, chief, California State Bureau of Chemistry.

The new color motion picture in sound "California Grows with Fertilizer," which was produced jointly by the California Association and the Natural Fertilizer Assn., will be shown.

The afternoon program will consist of four separate panel sessions. One will be concerned with pasture and forage crops and John Tollefson of Salinas will be the moderator. The other panel sessions will consist of discussion on vegetable crops with Weir Fethers, Stockton, as moderator; deciduous and citrus crops with Robert Whiting, Hayward, as moderator; and field crops with Ralph Waltz, San Francisco as moderator.

All persons who attend are requested to arrange their own accommodations. There will be no registration fee charge for the conference but orders for copies of the complete proceedings are being accepted at the office of the CFA on the basis of \$1 each.

Tighter Regulations Urged for Dusters in California

SACRAMENTO—Charles H. Branstetter, Jr., representing the Agricultural Aircraft Assn., Inc., has asked a California legislative committee for tighter regulations to bar "fly-by-night" crop dusters who "are causing a destructive competitive problem."

"It is much too easy to get into the business," Mr. Branstetter told the committee on agricultural and livestock problems. He explained that crop dusters receive an average net profit of only \$4,000 a year because of the competition and resulting problems.

"Fly-by-night, poorly financed operators cut prices to gain a foothold," he said. Members of the committee were asked to support bills already before the Legislature setting higher minimum standards for licensing of crop dusting operators.

Another bill would set maximum rates an operator can be charged for his insurance. Mr. Branstetter called present rates "much too high."

SOIL SAMPLES

FARGO—Tests of 2,016 soil samples from all parts of North Dakota show that 15% of the samples rated high, 24% medium, 28% low and 33% very low in available phosphorus, according to North Dakota Agricultural College.

California School Receives Donations

BERKELEY, CAL.—The University of California's Division of Agricultural Sciences received another \$3,700 in cash donations from two chemical manufacturing firms during the month of November and several other gifts of chemicals themselves. The purposes of the donations are to assist various departments of the agricultural college in research on plant fertilizers, diseases or insects.

The California Spray Chemical Corp. has presented a total of \$2,200 to be used on the Berkeley Campus for research on nitric-phosphate fertilizers. International Minerals and Chemicals Corp. has given \$1,500 to the Davis Campus for research on use of beet and liquor in ruminant nutrition.

Chemical gifts were made by several firms. The Berkeley campus received 5,600 lb. Nugreen fertilizer from the E. I. du Pont de Nemours and Co., Inc., and chemicals from the Durham Chemical Co., Geigy Agricultural Chemicals, Norsk Hydro, Wilson and George Meyer and Co., Shell Chemical Corp., H. L. Stoker Co., U.S. Gypsum Co., and Atkins Kroll and Co.

California Spray Chemical has also given 500 lb. Flotex wettable sulfur to the Davis Campus for pest control equipment studies.

900,000 Acres in Colorado to Need Spraying for Grasshoppers in 1955

DENVER — A recent survey revealed that it will be necessary for the Colorado legislature to appropriate \$177,000 if the state's rangeland grasshopper infestation in 1955 is to be controlled through spraying.

This would be the state's share, with the balance to be paid by the federal government and land-owners on equal basis.

Through field examinations, entomologists have determined that a total of 900,000 acres in the state will be in need of spraying between June 1 and July 15. Of the total, 15,000 acres are federally-owned and on these the cost would be borne entirely by federal government.

Following are the counties and infested range:

Yuma, 100,000 acres; Kit Carson, 50,000; Washington, 50,000; Logan, 30,000; Phillips, 30,000; Sedgwick, 10,000; Pueblo, 300,000; Las Animas, 100,000; Huerfano, 50,000; El Paso, 50,000; Fremont, 40,000; Archuleta, 55,000; Dolores, 10,000; Montezuma, 5,000; La Plata, 5,000.

In 1954, when the legislature appropriated \$200,000 to cover the state's one third share of the cost of control work, apathy on the part of ranchers crippled the program.

Only \$37,538 of the state fund was spent, and the balance was returned to the general fund.

Many ranchers balked at paying their shares of the cost, contending that the federal and state governments should pay total cost. Others, their ranges burned out by drouth and heat, were disinterested in grasshoppers.

The northeastern Colorado infestation of 1954, which covered limited areas in Logan and Yuma counties, and the northeast corner of Washington county, was untreated. Entomologists' mappings show that it now has spread to much larger areas in these counties, and also into Kit Carson, Phillips and Sedgwick counties.

SEED TREATMENT

ST. PAUL — Most farmers would find that the small amount of money invested in seed treatment would pay handsome dividends, according to R. C. Rose, University of Minnesota extension plant pathologist. He reports that seed treatment puts out of action many of the disease organisms that have found a home in the weeds—and, when the seed gets in the ground, treatment protects it against many disease organisms that live in the soil.

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new, full color pamphlets
tell how yields
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● MANY FAILURES to get expected responses from fertilizer applications are caused by lack of balance between nitrogen, phosphorus and potash. No one element can do the job alone. All three are found in the soil, but the one in short supply will limit the yields. Heavy yields require heavy applications of NITROGEN—more than is generally available from organic matter, crop residues, manure and starter fertilizer. Therefore, supplemental nitrogen is essential to profitable production of corn and other crops.

These important facts—and the reasons behind them—are explained, simply and accurately, in the two new pamphlets prepared by United States Steel agronomists.

The pamphlet, "MAKE BIGGER PROFITS WITH USS AMMONIUM SULPHATE" includes profit-building recommendations and remarks on corn and on many other crops as well. The symptoms of nitrogen deficiency and sufficient nitrogen are dramatically compared in full color.

The other color pamphlet, "HOW TO FIGURE NITROGEN FOR BIGGER CORN YIELDS" includes a useful and dependable field worksheet on which the farmer can easily figure his own nitrogen requirements. Starting with his desired per acre yield, he can figure the nitrogen he already has and how much more he needs to get the yield he wants.



How many do you want?

This is a first-rate, down-to-earth opportunity to boost your nitrogen sales. Check the number of pamphlets you want on the coupon and we will rush them to you free of charge. Be sure that every customer gets one.

But don't delay... the spring fertilizing season is at hand. Mail the coupon today.

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UNITED STATES STEEL

10-Year Michigan State College Study Points Up Advantages of Fertile Soil

EAST LANSING, MICH.—Michigan State College researchers report that it takes twice as much unfertilized land to produce the same amount of milk or wheat that can be produced on fertile soil.

That is shown by a ten-year nutrition study conducted by five departments at Michigan State in cooperation with the National Dairy Council and the American Dairy Assn. The research is nearing completion.

It has revealed that soil fertility does not change the composition or food value of crops.

Michigan State researchers found, however, that it was impossible to grow high-protein forage crops like alfalfa and clover on the unfertile soil. So they had to grow grass forage—brome and timothy—on both the fertile and unfertile soil to carry out the experiments.

Although the long time experiment shows that crops grown on unfertile soil are just as nutritious as those grown on well-fertilized land, Michigan State College researchers make this recommendation:

Lime, if needed, and substantial quantities of fertilizers are the best investment a farmer can make today.

BRUSH CONTROL

COLLEGE STATION, TEXAS — Runnels County, Texas recently authorized the purchase of four knapsack sprayers to promote the county's brush control program. According to J. A. Barton, county agent, an estimated 5,000 acres of Runnels County cropland fails to produce each year because of moisture-sapping brush in fence rows. This means that between \$30,000 and \$40,000 are lost each year by farmers.

Production Starts at New St. Regis Plant

NEW YORK—St. Regis Paper Co. has announced the commencement of production at its new multiwall paper bag manufacturing plant at Franklin, Va. The new plant will produce multiwall bags to serve the cement, feed, lime, fertilizer, chemical and other industries of the central southern Atlantic region.

The new plant, located on a 21-acre site, replaces the one formerly leased from the Camp Manufacturing Co., Inc., in Franklin.

Facilities in the new St. Regis plant provide approximately 152,000 sq. ft. space, and include four bag manufacturing lines, complete printing and engraving equipment, machine shop, paper and bag storage areas and general office space. When in full production, the plant will employ some 400 people with an annual payroll of \$1,500,000.

North Central ESA To Meet in March

MADISON, WIS.—The North Central Branch of the Entomological Society of America will hold its annual meeting March 24-25 at Michigan State College, East Lansing, it has been announced by Dr. T. C. Allen, U. of Wisconsin, chairman of the branch.

Dr. Allen states that the theme of the meeting will be "Today and the Next Ten Years" in entomology. Dr. Allen will sum up the opening session with a report on possible future achievements of the Branch.

Individual reports will be made on new chemicals, legislation, and other insect control questions. Speakers for the general opening session will include Harold Gundersen and Floyd Andre of Iowa State College, O. C. Alexander of the Gelgy Company, A. C. Hodson of the University of Minnesota, W. W. Sunderland of Dow Chemical Co., and Roger Smith of Kansas State College.

In addition to the general program several information section meetings will be offered. Cereal, legume, fruit, vegetable, and forest crops will receive attention. Insecticide effectiveness, biological relationships, and relationships between insects and man are included for discussion.

This will be the tenth annual meeting of the North Central Branch of the Entomological Society of America.

Gloomicides

Bobby could hardly wait to tell his kindergarten teacher the new "I can dress myself!"

She beamed, too. "Isn't that splendid!"

But as the morning wore on, three Bobby raised his hand to repeat the tidings. Finally teacher, exasperated, implied rather strongly that the new had lost its virgin freshness. After the fourth interruption and repetition, Bobby was summarily dispatched to sit in a corner behind a screen.

All was silent and serene for a space of five minutes. Then Bobby reappeared, sans apparel, and proudly proclaimed: "I can undress myself, too!"

★

Answering his doorbell a man found an old friend and a large dog standing on his porch.

"Come in! Come in!" he said.

His friend came in and sat down while the dog put the man's cat to flight, knocked over a bridge lamp and several knick-knacks, and finally made himself comfortable in one of the best chairs in the room.

When the guest rose to leave, the host said with a touch of sarcasm in his voice, "Aren't you forgetting your dog?"

"Dog? I have no dog. I thought he was yours."

★

"He who whispers down a well About the things he has to sell Will never glean the golden dollars Like him who climbs a tree and hollers."

★

The little boy was in church for the first time. When the choir, all in white surplices, entered he whispered hoarsely, "Oh, see, Daddy they're all going to get their hair cut!"

★

When money is found growing on trees, there's usually some grafting going on.



Sell these **Pittsburgh** WEED KILLERS and watch your 2,4-D Sales Climb!

There's a basic reason why you can increase your 2,4-D sales and profits with Pittsburgh Weed Killers. These field-tested herbicides consistently provide more uniform and dependable weed-killing results because they're Quality-Controlled from coal to packaged product at our basic and integrated agricultural chemical plant. This basic assurance of quality is your assurance of increased sales and satisfied customers.

Pittsburgh's broad family of tested, easy-to-use 2,4-D formulations enables you to sell the right formulation for every weed-killing job. And like all Pittsburgh Agricultural Chemicals, these formulations are backed by a complete advertising, merchandising and point-of-sale program to bring customers into your store. Write today for full information on how you can make more agricultural chemical profits the "Pittsburgh" way.

Standard for Quality

For immediate information about Pittsburgh Agricultural Chemicals, write or call your nearest Pittsburgh Coke & Chemical office at:

Atlanta • Los Angeles • Chicago • Dallas
Memphis • Minneapolis • New York • San Francisco
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Better Selling

**Richer
Fields for
Dealers**

A SPECIAL CROPLIFE DEPARTMENT TO HELP RETAILERS IMPROVE MERCHANDISING KNOW-HOW



AT MINNESOTA STORE—Shown above is a familiar scene in the Farmers Supply store at Fairmont, Minn., as an employee of the firm writes up an order from a farmer for farm chemicals. Note the farm chemical wall shelf display in the background.

Well-Rounded Merchandising Program, Alert Promotion Help Minnesota Firm Grow

By AL. P. NELSON
Croplife Special Writer

Farmers who received stationery in the form of a letter from the Farmers Supply, Fairmont, Minn., get a real story on fertilization, graphically portrayed. On each sheet of stationery the firm has four colored pictures. The copy heading these pictures says "Plants Tell Their Needs. Corn Speaks."

The first picture shows the drying of leaves of corn at the bottom of the plant in early summer, and the caption states, "This is nitrogen hunger, not dry weather." Another picture shows the corn all green but with thin leaves. Copy here explains, "This is dry weather signal."

The third picture in color shows the edges of the corn leaves turning a dry yellow. "And this is potash hunger" states the copy.

The last picture on the letterhead is of the leaves turning purplish, while the copy explains "Here I show phosphorus hunger."

Farmers looking at these graphic pictures recall seeing some of these fertilization danger signals sometime during the year in their corn crops, especially when they have stunted on fertilizer. Harvey Jacobsen, owner of the firm, reports that quite a few farmers save these letters just so they can have the colored pictures handy to check on their corn crops. When these letters are posted in the farm house or barn or shed, it is fine additional advertising for Farmers Supply.

This firm has been in business for about 14 years, and during that time its fertilizer operations have gradually been expanding. Several years ago, Mr. Jacobsen began handling bulk fertilizer, selling and spreading it.

In addition to dry fertilizers, this company has also gone into the sell-

ing of liquid nitrogen. It has three applicators for handling the distribution of this nitrogen. This type of fertilizer is much in favor with farmers in this area, reports the Jacobsen staff, with indications that volume of business done on this line will increase.

One other profitable operation in which the firm engages is custom spraying. It owns two outfits. One is a jeep which comes in handy for working in grain, and the other is a Hi-Boy which is equipped with three sprays and which facilitates weed spraying in corn.

The firm also has a sizeable stock of weed sprays and other farm chemicals and displays them well in a store addition at the front of its present building. Seeds and some farm tools are also sold, and thus the firm serves the farmer for many of his needs.

Farm chemicals get considerable publicity on the firm's radio program three days a week over the local station. The firm sponsors the 7 a.m. news broadcast on those days, a program which has a wide rural audience. Many farmers inquire about new agricultural chemicals which are advertised on this program.

Near Fairmont there is a large outdoor theater which is well patronized by farm people. Last year, Mr. Jacobsen advertised on this theater program, with pictures of farm fertilizer and weed spray items.

The staff at this store reports that they do considerable reading about fertilizers and farm chemicals in order to aid in selling. As one employee put it, "Farmers are always coming in and asking about some new chemical they read about. If you can't answer most of these questions you are on the spot."

No sales bets are missed by this

(Continued on page 19)



SHOP TALK

OVER THE COUNTER

FOR THE DEALER

By EMMET J. HOFFMAN

The practice of selling allied lines of merchandise has been adopted by most all types of retailers and evidence that this policy is successful is readily available.

Nowadays, customers expect to find tires and batteries at filling stations, a bakery counter in grocery stores, a line of paints at hardware stores, and so on.

Dealers in farm chemicals, in many cases are also feed retailers, elevator operators or operators of a general farm supply business. While it is not feasible, or even recommended in every case, that a dealer make a marriage of several allied lines, the study of such a possibility should not be overlooked by anyone in the position to do so. Such an expansion of course, must be financially feasible and capably managed.

The growing importance of the weekend urban gardener in many cases presents a fine opportunity for the farm chemicals dealer to widen his income and prestige. A nursery store sideline in the right location can attract hundreds of urban weekend gardeners bringing a demand for products and services which a farm chemicals dealer can provide. Sales in one line will stimulate sales in the other. Such a marriage is a "natural."

An Example

The story of how one dealer came about installing a nursery department and making it a big success is revealed in a recent bulletin of the California Hay, Grain & Feed Dealers Assn. This is an excerpt from the bulletin:

Just a few years back an enterprising young man decided to open a feed store in a small northern California town. He located on a main artery; he promoted, solicited, and followed all of the rules that should create a successful business. After struggling through the first two years he seemed to have reached his volume limit for the area and was barely making a modest living. His capital was limited and prevented him from dealing in high financing. A rapidly expanding urban residential area enveloped him.

He noticed the success and the increasing number of nursery operations in the neighborhood and decided to go into a full line of nursery products. Fortunately he had an empty lot next to his store which he acquired for a modest monthly figure. Putting up a simple lath greenhouse

and stocking it with all the necessary bare root stock, shrubs, flowers, and allied nursery items he soon created a thriving business.

Today this man is doing very well financially, deriving approximately 60% of his annual income from his nursery department. His nursery business has in turn aided his other business due to the increased customer traffic.

60% of His Business

Don't you have the same potential in the area which you serve? If you do and desire to exploit this profit potential, first, secure a nurseryman's license. Second, survey your potential market to determine how much area you need to devote to this endeavor—a lath greenhouse helps greatly to impress customers with your nursery service, also securing a person trained in nursery work is a great advantage; however, you as a store owner can soon learn the fundamentals if you apply yourself diligently. Third, tie in with a good reputable wholesale nursery supplier of which there are many. You'll find giving one supplier all your business will pay dividends in better margins, consignments, and better stock control. Fourth, secure a good line of garden tractors, mowers, tools, seeds, etc., to go with your nursery—they are real money makers.

Our northern California farm supply dealer reported he sold 125 garden tractors last spring at \$40 gross profit each, which adds up to a neat \$5,000 on this one item. There's a challenge, a real challenge for extra money in the nursery game. Does it strike a spark in you?

Test Your FERTILIZER I. Q.

By DR. MALCOLM H. McVICKAR
Chief Agronomist, National Fertilizer Assn.

Q. What are some of our common nitrogen fertilizers?

A. The more common ones are ammonium nitrate, ammonium sulfate, ammonium phosphate, cyanamid, nitrate of soda, urea and anhydrous ammonia. All of these materials are made synthetically. In addition, nitrate of soda is also imported from natural deposits found in Chile.



Doing Business With

Oscar & Pat

Burly Bill Edwards, his cheeks sporting a two day growth of beard, came ambling into the Schoenfeld & McGillicuddy farm store, about four or five days after the county snow-plows had plowed out the countryside from one of the biggest late winter snows in history.

"Gosh, Oscar," grinned Edwards, leaning on the railing which separated the office area from the fertilizer store display section, "This sure was a dandy snowstorm, wasn't it?"

"Good?" growled Oscar, the one who always watched costs. "What's good about it? Our business has been lousy lately. Farmers couldn't get to town."

"Now ain't that jest too bad," drawled the farmer. "Is that all you want to see us for, Oscar, to sell us stuff? Ain't you glad to see us just as friends?"

Oscar's face got red. "W—why sure," he said. "But you—you want what we got, too, and that's why you come here."

"Maybe you got something there," grinned the farmer. "But this snow. Gee, look at the nitrogen we get. I heard some university professor on the radio tell how much nitrogen a farmer gets from the snow and the rain. Saves him money."

Oscar looked nonplussed. He could not quite fathom why the Almighty was a competitor to Schoenfeld & McGillicuddy, but evidently this was proof that the Creator was.

"In fact," went on Edwards philosophically, "I figure we got so much nitrogen from this snowstorm and from late fall rains, that I won't have to sidedress my corn this summer. That would just be wasting nitrogen. Farm prices ain't up like automobile prices—so we farmers have to economize."

Oscar swallowed hard. This was cost cutting reasoning which he did not know how to combat, at least for the moment.

"And another thing," went on Edwards, "on that fertilizer I ordered last fall. I don't think I need such a high analysis, with so much nitrogen in it—for the same reason—so give me a cheaper grade, Oscar."

Once more Oscar swallowed hard, and just stared.

"Then," said the farmer, "since farm prices are low, especially milk and eggs, there's no use of my bein' foolish and puttin' so much fertilizer on my land as I ordered. I'll just cut that order from 18 tons to about 9. That oughta do me in this tough year."

Oscar felt like making a scathing remark about farmers who made certain commitments on fertilizer and then reneged, but all he said was, "This—this is a cash deal, isn't it?" At least he felt he could salvage that much from a bad transaction, or rather a disappointing one.

"Cash!" echoed the farmer. "Who said anything about cash? Why, heck, I'll pay for my fertilizer like I did last year, some on account each time I get my milk check. You ain't ever lost any money on my fertilizer or feed account, have you?"

"N—no," Oscar said stubbornly,

but then sticking to his good credit habit, he added, "but we've had to wait for some of the money."

"Heck," replied Bill Edwards good naturedly, "who doesn't have to wait for money nowadays. When old bossy squirts that milk into my milk pails,

is the dairy right on hand to pay me for each pailful? Shucks, no. I gotta wait thirty days or more for my money."

"And now look what happens when I raise chickens. I pay for the chicks in March and feed them all the way

to fall before I can sell the first egg. I pay you fellows for all the feed and equipment the chicks need. You get your money a lot faster than I do. Come to think of it, I wait for my egg money about four times as long as you wait for yours. Now ain't that so?"

Once more Oscar swallowed hard. He felt he was getting in too deep in this argument, but he didn't know how to sidestep it.

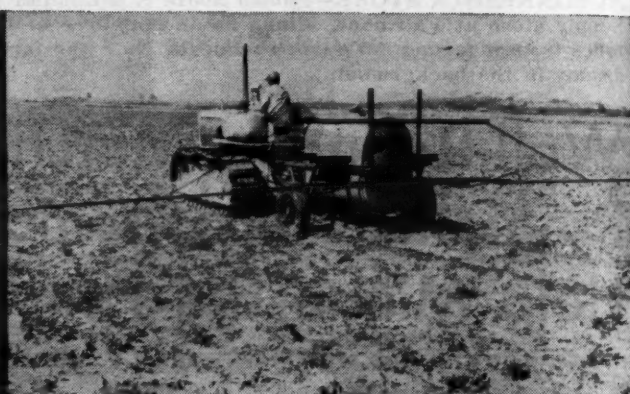
"You fellows that sell the farmer are too anxious to get his money," Oscar, went on Edwards, his face getting red. "You're—you're almost itchin' to get your money before we load our fertilizer. I don't like it."

At this point, Pat McGillicuddy came forward. He had been arranging a display nearby and had

Moving ARCADIAN makes big-profit business



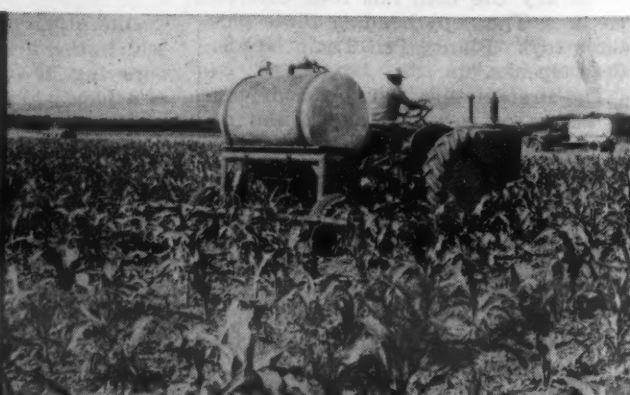
The balanced fertilizer for modern crops, ARCADIAN 12-12-12 packs concentrated growing power in easy-lifting 80-pound bags. Every firm granule is complete plant food rich in nitrogen, phosphorus and potash. You handle less weight—farmers handle less—you both get more out of it.



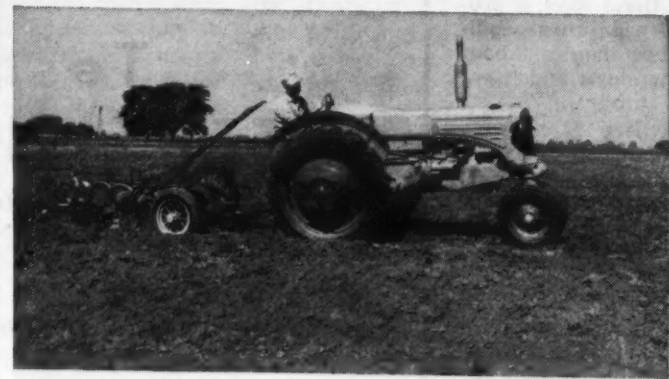
Spreading nitrogen on 100 acres per day is easy with new ARCADIAN low-pressure Nitrogen Solutions. A tractor tank with spray boom or dribble tubes does the job—with no bags for dealer or farmer to lift. Sell ARCADIAN Nitrogen Solutions and application equipment.



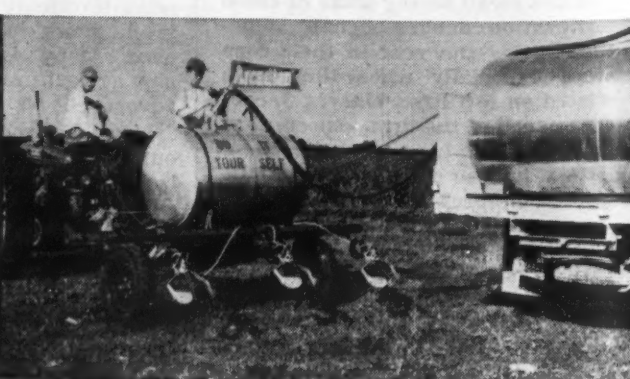
A labor-saver if there ever was one, ARCADIAN UREA 45 Nitrogen Fertilizer packs 45 pounds of nitrogen in every 100 pounds weight. It's the most concentrated dry-nitrogen available, makes a good payload for you and the farmer.



Side-dressing 40 to 80 acres a day with nitrogen is easy with low-pressure ARCADIAN NITRANA® Solutions and is a fast-growing practice. Both NITRANA and application equipment are making big sales for handlers of the ARCADIAN line.



Plowdown of fertilizer is the way more and more farmers turn sod, stalks and straw into nitrogen-rich organic matter that builds bigger crops while it improves the soil. ARCADIAN products are ideal for this market that spreads fertilizer sales over the year.



Machinery does the heavy work for you as well as the farmer when you handle and sell ARCADIAN Nitrogen Solutions. They save labor and backaches, speed up handling, and build profitable new fertilizer and equipment business all in one.

overheard the entire conversation, but had not thought it wise to enter into it before this.

"Hi, Bill," he said with a smile. "I know just how you feel about cutting expenses. Oscar and I feel like that lots of times. Maybe you're right about cutting down on the amount of fertilizer you'll use this year. You can use your reserve this year and get by."

Bill Edwards frowned. "My reserve, what do you mean, Pat?"

"Well," explained Pat, "of all the fertilizer you put into the ground every year, there's a certain amount of carryover value. The ag experts say that about one fourth of the nitrogen you apply to your land this year—if in sufficient quantity—has a carryover to next year. On phos-

phate it's about 40 to 70%, depending on the soil, and with potash it's about the same as phosphate."

"Huh," said Edwards, "that's kinda expensive for the farmer, ain't it, buying and applying a lot of fertilizer one year and not using all of it till the next?"

"It may seem that way, but it's not so," Pat said patiently. "You see, the experts claim that whatever is left as a carryover—which the plants didn't use—can be used next year and sometimes the third year, and you don't have the expense of spreading that carryover fertilizer, or hauling and handling it."

Bill Edwards sucked at a tooth for a second. "I hadn't thought of that, Pat, but I guess that's right."

"Then," continued Pat, "that car-

ryover fertilizer from one year to the next has another value. It's there for the plants to use early in the planting season. It's cured properly and ready to go to work. Gives your crops so much better a start. So even if you've paid for that fertilizer a year in advance, you get extra, early value from it, especially so on pastures."

"Doggone, I never looked at it that way."

Pat scratched his bushy hair. "So—if you want to Bill—you can cut down on the fertilizer you buy and use this year and use up that reserve that you've already got in the soil from last year."

At this apparent business heresy, Oscar looked very shocked. His lips came together in a thin line. He

looked as if he were ready to explode at his partner, but a look from Pat restrained him.

Bill Edwards was thinking. Finally, he said, "So I could, Pat, but then I wouldn't have any reserve fertilizer in my soil for the following year, would I?"

"Well, not much," Pat agreed, "but you can take that chance, if you want to cut down on costs."

"Yeah," Bill said reflectively, "but I don't like that idea of not having fertilizer in reserve in my soil. Suppose farm prices would go up the next year. Then other farmers would get the jump on me in building soils for big crops."

Pat nodded. "That's a chance you have to take, of course, if you really want to cut costs as much as you say you do."

"Well, I ain't that hard up, Pat," began Bill. "I was only thinking that I oughta cut down, with farm prices down right now—shucks I ain't gonna be scared. I guess I'll take the 18 tons and sidedress my corn in summer anyway. That is, if you don't want your money right now, like—like Oscar's been askin' for."

"Of course we don't want the money now," Pat said slowly, "if you haven't got it to pay. Oscar only mentioned cash because we've got a special offer of an extra 1% to those who pay for fertilizer cash or within 30 days. Oscar only wanted to save you money."

Bill Edwards grinned as he looked at Oscar. "Well, what do you know," he said in an easy tone. "Guess Oscar ain't so bad as I figured. For a minute, there, I thought he was ready to hand me over to the sheriff."

"Don't kid me quite so rough next time, Oscar. Or smile a little, then I'll know you don't mean everything you say. Shucks, I reckon I can pay for that fertilizer when I get it. Might as well save that extra 1%."

Fertilizers to the farm fit business for you!



New, improved forms of dependable nitrogen such as large-crystal ARCADIAN American Nitrate of Soda continue to move in volume. Free-flowing ARCADIAN Nitrate of Soda and pelleted ARCADIAN A-N-L® Nitrogen Fertilizer are adapted to new styles of farming.

Proof of the profits in modern ARCADIAN Fertilizers is being shown in Agricultural College experimental plots like this one on wheat, as well as in field days and farmer-dealer demonstrations. When you sell ARCADIAN, this practical proof helps bring you new customers, new sales.

Expanded plant capacity for making the newest, most modern forms of fertilizer is part of the continuing program Nitrogen Division is aiming at the fast-growing market for more and better plant foods. Your customers are buying ARCADIAN —so sell ARCADIAN for extra profits.

MINNESOTA FIRM

(Continued from page 17)

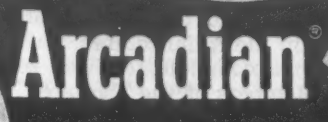
enterprising firm. Sidelines which fit into the dull season include television sets and outboard motors. The latter can be repaired and serviced in winter, getting them ready for spring and summer, while winter time television repairing is also a good profit item. Since many farmers have television nowadays, Mr. Jacobsen is cashing in on his farm contracts by having a line of sets available for sale.

A large sign outside the building informs farmers of the wide range of products and services available here—all the way from fertilizers, farm chemicals, seeds, custom spraying, etc. to outboard motors. A sign like this encourages farmers to ask questions about the merchandise, thus leading to extra sales.

Barley Virus


FARGO — In a survey of barley produced in North Dakota in 1954 it has been found that stripe mosaic or false stripe was present in about all parts of the state. The study of this virus disease was made by Dr. Roland Timian, plant pathologist of the U.S. Department of Agriculture located at North Dakota Agricultural College, with the cooperation of county extension agents. In greenhouse tests of 115 samples of barley of the 1954 crop obtained from growers by the county agents, it was found that 54 of the samples, or 47%, had some seed infected with the virus, varying from a trace up to 15% infection. The disease was also found in about 90% of over 200 barley fields around the state examined by Dr. Timian in the summer of 1954.

Take advantage of this double-barreled SALES OPPORTUNITY!



Arcadian

Make the most of the ferment in the fertilizer business! Sell new ARCADIAN Fertilizers—sell fast-improving new fertilizer equipment. Tie in with the biggest advertising campaign in fertilizer history, now featuring ARCADIAN products in farm magazines, newspapers and radio broadcasts that blanket your territory.



Fill in and mail this coupon NOW!

- ☐ UREA 45 Fertilizer
45% Nitrogen Pellets
 - ☐ 12-12-12 Fertilizer
Granular
 - ☐ American Nitrate of Soda
Improved Granular
 - ☐ A-N-L® Nitrogen Fertilizer
Pelleted
 - Nitrogen Solutions**
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NITRANA® and URASOL*
- *Trade-Mark

NITROGEN DIVISION Allied Chemical & Dye Corporation
40 Rector St., New York 6, N. Y.



Please provide me full information on the products I have checked at the left.
☐ Please have an ARCADIAN salesman call on me.

NAME _____
FIRM _____
ADDRESS _____
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"Your Grandfather sold V-C FERTILIZERS!"

V-C FERTILIZERS are known and trusted by this young man starting out in business.

Ever since he can remember, his father and grandfather have been selling V-C Fertilizers and more and more good farmers in his neighborhood have been buying and using these better fertilizers.

For 60 years, in many communities in many states, Virginia-Carolina Chemical Corporation has been making and holding friends . . . agents and dealers like John Smith & Son . . . and good farmers everywhere who try V-C Fertilizers and then keep on buying and using V-C Fertilizers.

More than 5,000 reliable dealers have been supplying their customers V-C Fertilizers continuously for at least 10 years. Many of these dealers have handled V-C Fertilizers for 30, 40 or 50 years and longer.

Such well-established loyalty among so many fine folks is a mighty sound endorse-

ment for V-C Fertilizers. It means that year after year V-C practical farm experience, V-C scientific research and V-C manufacturing skill continue to provide better and better fertilizers for every crop on every soil. It also means that when you buy V-C Fertilizers, you are getting an honest and dependable product manufactured and sold by people who value your friendship and your confidence.



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60th ANNIVERSARY

VIRGINIA-CAROLINA CHEMICAL CORPORATION

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Albany, Ga. • Atlanta, Ga. • Baltimore, Md. • Birmingham, Ala. • Carteret, N.J. • Cincinnati, Ohio • Columbia, S.C.
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 Montgomery, Ala. • Norfolk, Va. • Orlando, Fla. • Richmond, Va. • Savannah, Ga. • Shreveport, La. • Wilmington, N.C.

Insecticides Save \$7 Million for Illinois Farmers

SPRINGFIELD, ILL. — Illinois farmers saved about \$7 million last year by using insecticides on crop-destroying insects, according to the Illinois Natural History Survey.

Dr. Harlow B. Mills, survey chief, who made the estimate, also said that corn disease curtailed potential Illinois production by 80,700,000 bu. last year. This represents a financial loss of about \$13 million.

The survey warned that corn borer and chinch bug infestation could reach serious proportions this year.

Purdue Agronomist Explains New Soil Test Recommendations

LAFAYETTE, IND.—R. D. Bronson, Purdue Agronomy Department, explained the new Purdue soil test recommendations at the recent Annual Agricultural Conference at Purdue University. He pointed out that advances in fertilizer technology and changes in the economics of farm operation have brought up new problems in making fertilizer and liming recommendations based on soil tests.

More than 250 farmers heard Mr. Bronson explain that today's efficient fertilizer usage hinges on a set of conditions which is seldom the same for any two farms or farm operators.

The new soil test report will give fertilizer recommendations in pounds of nitrogen, phosphate and potash needed. This will enable the farmer to take advantage of the variety of mixed and straight fertilizer materials and the different types of fertilizer application equipment available.

Soil test report sheets, a simplified table of fertilizer analyses, and supplementary information entitled "Fertilizer Recommendation Pointers" make up the new material. All information concerning a sample will appear on one sheet. Included will be sample identification, crop, fertilizer recommendation, lime requirement and the soil test results upon which the recommendation is based.

New Fertilizer Firm Formed in Nebraska

ALLIANCE, NEB. — The Keeley-Kelly Tractor Co. here has announced the formation of the Western Fertilizer & Cordage Co. The company was formed to make liquid nitrogen fertilizer, in solution form, available to the farmers and ranchers in the Alliance area. The firm will offer a complete fertilizer service.

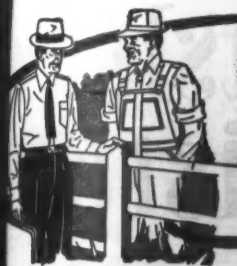
Members of the firm are Gordon J. Keeley, Ronald J. Kelly, Max R. Garwood and Roger Crum.

A good crowd attended a recent farm fertilizer meeting in Alliance, sponsored by the new company.

The program included a movie, "Mr. N," followed by a talk on the application of nitrogen to corn and small grains by Joe Turning, Spencer Chemical Co., Kansas City, Mo.; "Liquid Nitrogen Solutions and Their Application," by Mr. Brannan, Farm Fertilizer, Inc., and "The Value and Method of Soil Testing," John Reynolds, county extension agent.

Joins Minnesota Staff

ST. PAUL—George R. Blake, a soil physicist, has joined the University of Minnesota's staff as a research associate. He comes to Minnesota from Rutgers University, New Brunswick, N.J., where he was an associate professor of soil physics and active in research in that field.



FARM SERVICE DATA

Extension Station Reports

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Farmers can boost labor income on an oat crop by \$1.80 per hour and increase wheat yield by 14 bu. per acre by using the right amount of fertilizer and following practices that have been recommended by the Michigan Agricultural Experiment Station.

That was the gist of a recent talk by C. R. (Ray) Hoglund before a Farmers' Week audience at Michigan State College. Mr. Hoglund, a U.S. Department of Agriculture researcher at MSC, contended that the average farmer will have to double the amount of fertilizer he uses at planting time to make oats a paying crop.

And the farmer would have to make increased use of improved varieties, better tillage and weed control practices and he would have to file poorly drained fields, the farm economist insisted. The average farmer now, he said, only makes 20¢ per hour for labor income on oats. He suggested the figure can be \$2.

★

O. T. Coleman, University of Missouri extension soils specialist, in a talk given during the Soil Fertility and Plant Nutrition Short Course, said, "Boron is badly needed on many Missouri soils for alfalfa production. From 5% to preferably 7½% borax in the 0-1-1 or preferably 0-1-3 mixture is suggested."

★

Farmers are wasting their time when they worry about whether nitrogen should be supplied by legumes or fertilizers so far as the plant food itself is concerned, according to A. L. Lang, University of Illinois soils specialist. He points out that, even if legume acreage were doubled, farmers could use several times as much nitrogen fertilizer as they are using and still not replace all that crops take out in a year.

Mr. Lang figures that crops in Illinois each year use about 450,000 tons of pure nitrogen. To supply that amount of nitrogen, farmers would have to use 1,350,000 tons of ammonium nitrate.

Roughly a third of the pure nitrogen (about 159,000 tons) is replaced by the three million acres of legumes grown in the state each year. An acre of legumes will easily add 100 pounds of nitrogen, Mr. Lang says.

That leaves about 300,000 tons of pure nitrogen as a potential fertilizer market. In the past few years fertilizer dealers have been selling just a little more than a tenth of that amount, or about 40,000 tons.

Mr. Lang figures that the nine million acres of corn in the state take about 270,000 tons of pure nitrogen a year. The four million acres of small grain take about 80,000 tons and the five million acres of pasture take about 100,000 tons.

★

Higher yields of grain are possible on most Minnesota farms with careful fertilizing, according to research at 78 trial plots over the state last summer. Charles A. Simkins, University of Minnesota extension soils specialist, reports that fertilizer demonstrations in the Red River Valley show about 70% of the land where

legumes and fallow were not used recently needs nitrogen for best grain yields.

Test plots at 78 locations over the state showed grain yield increases ranging up to 15 bu. per acre when nitrogen was applied. All the locations received a phosphate application of about 40 lb. P₂O₅ per acre.

Average wheat yield in these tests rose 5.5 bu. per acre when 25 lb. or more of nitrogen per acre was put on. Barley yields increased 6.3 bu. per acre when 25 lb. or more nitrogen went on each acre, Mr. Simkins said.

Applying nitrogen at 50 lb. per acre gave profitable increases over the 25 lb.-nitrogen-per-acre rate in about a third of the locations.

★

Corn is one of the hungriest members of the crop family. How big is its appetite?

Midwestern agronomists estimate that a 100-bu. corn crop including stover eats up about 140 lb. nitrogen, 54 lb. phosphate and 135 lb. potash per acre.

This means that soil has to be well stocked with nutrients to pro-

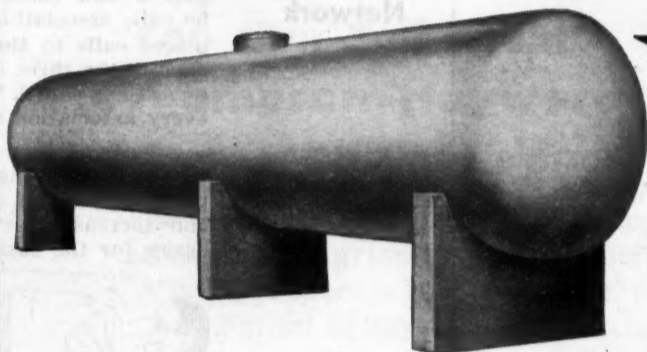
duce top yields per acre. Nutrients needed to reinforce the soil's own plant food reserves can be supplied in the form of commercial fertilizer containing nitrogen, phosphate and potash.

But a high nutrient supply isn't the whole story. Also needed is a stalk population big enough to make use of all the nutrients soil can provide.

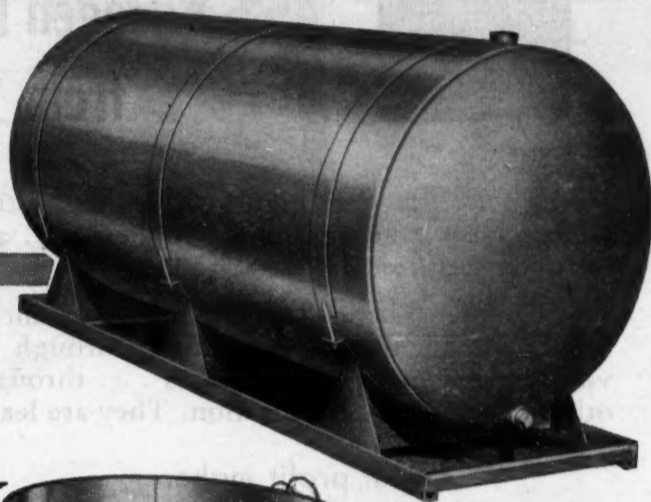
Several other factors are important too. These include: 1—An ample moisture supply; 2—good soil structure and a steadily replenished supply of organic matter; 3—the use of hybrid seed best adapted to your soil and the growing conditions in your area; 4—improved cultivation that keeps the weeds in check; 5—control of insects and disease.

For farm storage...

For bulk storage...



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SOILS and FERTILIZERS

Fourth Edition

By **FIRMAN E. BEAR**, Research Specialist, New Jersey Agricultural Experiment Station.



1953. 420 Pages \$6.00

Covers in detail: soil chemicals . . . important soil elements such as nitrogen, phosphorus, calcium . . . yield prospects of crop plants . . . moisture control . . . soil management . . . mechanical operations . . . soil conservation . . . organic matter maintenance.

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RINGING THE cash register

Merchandising Hints for The Retailer

Profitable Service

Dealers can lend valuable assistance in the current emphasis on cutting down grain losses from rodents and insects and in reducing rodent and insect numbers. Such assistance will help them build up a bigger rodenticide and insecticide business and at the same time perform a service to the farmer in enabling him to cut down losses from rodents and insects. The dealer can set up window and in-store displays and devote several ads to this topic. Here are some themes for displays and ads. Secure from the county agent some figures on the losses caused on the average farm in your area by rodents and insects and play these up; rodent control is a year around chore; farm control of insects is most important in summer and fall; according to state agricultural colleges each pound of insects causes the loss of 5 lb. of vegetation each year, insects in the U.S. nullify the labor of at least 1,000,000 working men each year, seventeen grasshoppers per square yard can eat one ton of alfalfa per acre each day, more trees are killed by insects each year than are destroyed by forest fires, and there are 86,000 named species of insects in the U.S. and 10,000 of them are considered "public enemies."

Telephone Network

One retailers' association in California has adopted a chain telephone check warning system and recently used it to apprehend phony check passers who cashed nearly \$1,500 in a weekend spree. As soon as a retailer member gets a bad check or even becomes suspicious of one he calls association headquarters. A representative there places calls to three other members of the association each of the three calls three others and so on until every member is called. Within an hour the warning goes out to every association member.

Make It Easy



By arranging merchandise, counters, islands and departments in an orderly, well-planned manner a dealer can increase in-store sales merely by making buying easier for the customer. Keep prices on all merchandise make the figures large, easy to see and up-to-date. Study the possibility of offering savings for quantities of purchases. Feature jumble displays of smaller items. Remember, mass displays make the best impression. Feature items with a rapid turnover. Identify departments prominently. Departmentalize, that is keep the garden supplies in one section, chicken feeds in another area, insecticides in another, etc. Keep related items together. Try an occasional one-price counter, for example — "Your choice—xx cents." Use an occasional gimmick such as chalking foot tracks on the floor and leading them to the seed department with a sign reading, "All tracks lead to the seed department."

Worth Lots Of Money

Large department stores such as Marshall Field of Chicago and Wanamaker's of New York estimate that the value of their window space for advertising purposes to them is over \$1 million yearly. The worth of window displays should not be underestimated. Give your windows a chance to help you sell merchandise. They have great value for advertising purposes.

Hang On to Customers

How many customers does the average retailer lose each year and what causes them to leave? Available statistics show that out of every 100 customers, 15 leave during the first year; 13 the second year; 11 in the third; nine in the fourth; eight in the fifth; seven in the sixth; six in the seventh; five in the eighth; four in the ninth and three in the tenth year. It is estimated that a total of 81 customers are lost in a 10-year period. These reasons are given: 68% are lost because of discourteous or indifferent treatment and/or poor service; 14 leave because grievances are not adjusted; 9% are attracted by lower prices elsewhere; 3% move away and 1% die. It is interesting to note that in the area where the dealer loses most of his customers—discourteous or indifferent treatment, poor service and unadjusted grievances—is the area where he can work most effectively to combat the problem of lost customers. It is really a simple matter to be courteous, friendly, sincere, give prompt and efficient service and if there is a complaint—to handle it so that the customer is completely satisfied. It is also important that a "lost" customer be brought back as soon as possible. If he is allowed to stay away a year or more it becomes quite difficult to make him a paying patron again.

Farm Meetings Are Sales Help, Say Ohio Dealer

By attending as many farm grange and other rural events as possible, Howard L. J. Ramey of the Ramey Feed Store, Portsmouth, Ohio keeps in close contact with farmers at the times when they discuss fertilizers and feeds. Usually one of the Rameys is able to answer a fertilizer or feed question asked by a farmer at such a meeting, and this is appreciated by many of them.

"In attending such meetings we do find that we can keep up with what the farmer is doing, and we learn at first hand what his problems are," states L. J. Ramey. "This information is very valuable to us in working out our merchandising program on fertilizers and feeds."

This store sells fertilizers in bags and reports that as yet there is very little liquid fertilizer being used in this area. Dry fertilizer with an analysis of 5-10-10 is widely used in the growing of potatoes, 3-12-12 for corn and 3-12-12 for wheat, Mr. Ramey reports.

The firm makes a complete line of poultry, dairy and hog feeds and also sells several formula feed lines. While a great many farmers come here to pick up their fertilizer and feed, the company also has a delivery service. The Ramey organization also operates a grocery and feed store at nearby Menford, Ohio, where fertilizer is also carried in stock. Thus the company has two good locations from which to sell its products, covering a wide area.

"We find that farmers are very interested in fertilizers and the part they play in helping to get increased yields per acre," states Mr. Ramey.

"They are anxious to get more information on fertilizers and are eager to discuss it. Many of them have chats about fertilizers right here at the mill with their friends, and that's a very good way to step up interest in proper fertilization."

With two stores, the Ramey organization is a consistent advertiser in Portsmouth and Menford newspapers. Fertilizers and feeds are often mentioned in the Menford grocery store copy, and, of course, get feature billing in Portsmouth copy.

Heavy Grasshopper Infestation Expected In Wisconsin

MADISON, WIS. — Grasshoppers again will be severe in Wisconsin during the coming season.

They're expected to attack farmlands in even greater numbers than last year, says E. H. Fisher, insect control specialist at the University of Wisconsin. Federal and State Department of Agriculture surveys last fall bear out the prediction that Wisconsin will be one of the states hard hit by grasshoppers.

Heaviest infestation is anticipated in the southern half of the state. Mr. Fisher says grasshoppers probably will attack two thirds to three fourths of Wisconsin's cropland area in numbers large enough to call for control measures.

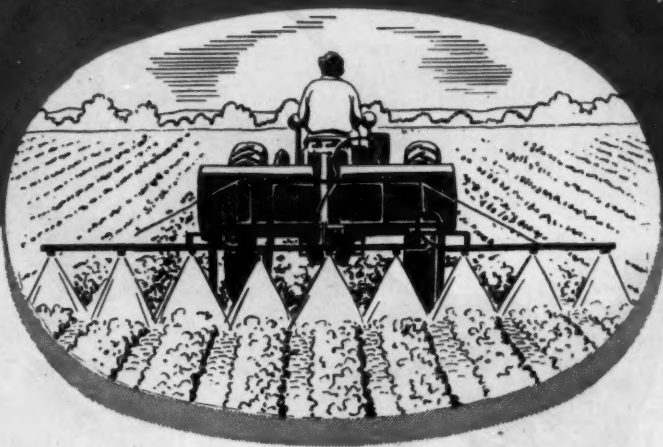
The earliest hatching of importance will be noticed late in May and early in June. Mr. Fisher advocates spraying at that time.

Of the crop acreage seriously attacked last year, about 77% was in alfalfa, clover and pasture; 14% in small grain; 5% in corn; and 4% in fruits, vegetables and tobacco.

Some 60,000 acres were treated for grasshoppers in 1954.

MR. DEALER

Your Customers Need WEED KILLERS!



You Can Sell Them Thompson-Hayward DED-WEED with Confidence, because...

You know that DED-WEED represents the latest advance in agricultural chemistry. Every DED-WEED product is farm-tested...of proven effectiveness...economical to buy...and easy to use.

Whether a customer wants to control weeds in field or pasture, there is a Thompson-Hayward DED-WEED formulated for his specific need. Sell DED-WEED for troublesome weeds. Sell DED-WEED for woody growth and hard-to-kill weeds.

Stock up now on the formulations of Thompson-Hayward DED-WEED, needed in your locality. Be ready to meet the demand that is bound to come soon.

Our Local Staff Can Help You and Your Customers Thompson-Hayward maintains warehouses of our own and sales offices in 18 different cities. The Thompson-Hayward headquarters nearest you is staffed with men who know your particular local conditions and what products will serve your customers best. Don't hesitate to call the Thompson-Hayward office nearest you at any time for advice on any agricultural chemical problem.

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AGRICULTURAL
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Includes...

INSECTICIDES FOR CROPS

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Aldrin WE-25
Heptachlor E-2
Tri-6 (BHC)
Ded Tox (DDT Products)
Phosfume (Parathion Products)
Toxichlor (Chlordane Products)
Phenacide (Toxaphene)

FLY SPRAYS

Dairy Cattle Spray
Methoxychlor
Malathion
Lindex (Lindane Products)
Pyrtex (Pyrethrin Products for Dairy Cattle and Food Processing Plants)

WOOD PRESERVATIVES

(Containing Penta)
Termi-trol
Permagard

GRAIN FUMIGANTS

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DISINFECTANTS

Animal Dip (Coal Tar)
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(Warfarin Products)
Rat-Trol (Bait and Concentrate)

CRUDE DRUGS

VITA-RICH FEED FORTIFIERS

MIN-RICH TRACE MINERALS

POULTRY AND HATCHERY SUPPLIES

SEED DISINFECTANTS AND INOCULATORS

18 SALES OFFICES and WAREHOUSES OF OUR OWN

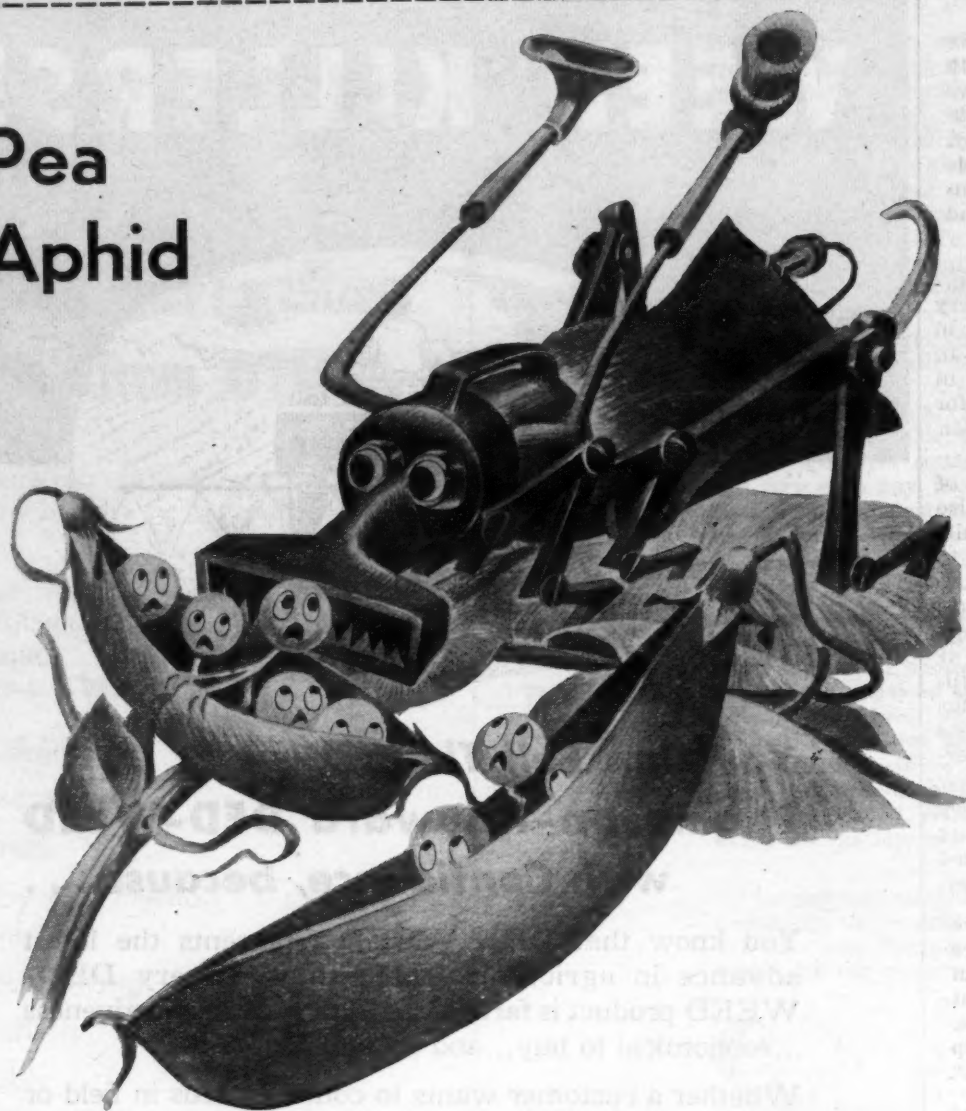


TO GIVE YOU COMPLETE, FAST SERVICE

Mr. Dealer--Cut out this page for your bulletin board

BUG OF THE WEEK

Pea Aphid



How to Identify

The adult aphid is a light-green, soft-bodied insect that may or may not have wings. Most of the adults are wingless, but when the numbers of aphids on a plant become numerous, winged ones appear and thus cause the insect to spread to new points.

Habits of Pea Aphid

Winged aphids fly into the pea fields early in the spring and produce living young which look like the wingless adult aphids. These young nymphs molt four times and begin reproducing as adults in from 7 to 14 days. Females produce around a half-dozen a day and keep this pace until as many as 100 have been born. Generations of females number from ten to twenty each year. Females lay eggs mostly on the leaves and stems of alfalfa and red clover. Eggs measure about 1/30th of an inch in length and are light green in color at first. Later, however, they become black and shiny. In colder climates, only the eggs survive the rigors of winter, giving rise to next season's populations. Aphids have many natural enemies, but in cases where the activities of these enemies are checked, multiplication of aphids is described as being "phenomenal."

Damage Done by Pea Aphid

This pest injures garden peas by sucking the sap from leaves, stems, blossoms and pods. Even a few aphids may kill small plants and stunt the growth of larger ones. The pest may also spread virus diseases, thus causing further damage to the crop. Even when small numbers of aphids attack a crop, they affect badly the quality of the peas, thus causing economic loss. Aphids, being small, are sometimes overlooked and the injury they do attributed to other insects such as lady beetles which in reality are feeding upon the aphids.

Control of Pea Aphids

Various dust preparations are recommended for control of aphids. These include 1% to 3% DDT and 2% to 3% methylated naphthalenes; 0.5% to 1% gamma BHC; 4% nicotine; 0.5% to 0.75% rotenone and 1% to 2% paraffin-base oil; 0.5% to 1% parathion; and 0.5% actual tetraethyl pyrophosphate. In large fields, dust should be applied at 35 to 45 lb. an acre. Precautions regarding use of certain materials on peas to be used as animal forage should be observed. (Check state recommendations.)

Cartoon of pea aphid furnished Croplife through courtesy of E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.

Previous "Bug of the Week" features are being reprinted in attractive 24-page booklet, priced at 25¢ single copies; reduced rates in quantities. Write Croplife Reprint Dept., Box 67, Minneapolis 1, Minn.

Illinois Firm Bases Sales Campaign for Farm Chemicals On Soil Testing Service

When E. Burton of the Farm Supply Co., Harvard, Ill., decided to expand his fertilizer and farm chemicals sales a few years ago, he made a thorough study of his area, the needs of his customers and then came up with a program which has paid off very well in additional business.

In the first place, Mr. Burton decided that if he was going to sell a fertilizer thoroughly on the value of fertilizer, then he would need to have all samples tested. He knew, too, that if a dealer issued invitations to farmers to bring soil samples to his store, not enough of them would respond, even though they might be interested in such service.

Therefore, Mr. Burton worked up a thorough service and sales campaign for fertilizer, based on soil testing. He personally began to visit farmers in his trade area, talking with them about the importance of having soil tested, and then basing fertilization purchases upon the results of the test.

This sound, practical approach appealed to many of the farmers, and they listened with interest when Mr. Burton said that he would be glad to take five to eight soil samples from a 10 or 20 acre plot of ground, test them and then give the farmer a chart of that ground, informing him of the status of the soil.

Mr. Burton charges 35¢ for testing soil samples, but this charge is not assessed against farmers who buy fertilizer on the basis of his recommendations. To handle this soil testing, Mr. Burton set up a soil testing laboratory in his home.

During evenings he can run through about five test samples, he states. He likes to do the work at home, where he isn't interrupted with the rush of the day's business. Handling the soil testing in this manner, he can keep up with the demand.

Mr. Burton often runs a composite sample on the soil samples taken from various spots on a tract of land, and again, he may test each soil sample separately. He then makes a chart of the various soil sampled areas, writing in the conditions as he found them and suggesting certain fertilizer applications.

For instance, on a chart reading 1/2-ML-VL, the 1/2 term implies the acidity factor of the soil, the ML that it is medium low in phosphates, and VL means very low in potash.

Using such a chart, a report of which he keeps on file, Mr. Burton is able to sell a lot of fertilizer, for he has proven to the farmer what his soil needs. He urges the farmer to keep his record of the soil chart and to check on results obtained on that tract through proper fertilization. The following year, that farmer, studying results and costs, can easily see that it will pay him to have more soil tests made on additional land and to fertilize it according to recommendations made by Mr. Burton.

To carry the sales and service still farther, Mr. Burton offers a fertilizer spreading service. He says this service is a very important trade building idea, for it follows through on the sale of fertilizer and gets the job done properly for the busy farmer.

Mr. Burton has expanded his business to include bulk spreading. In addition to his own truck spreader he has four spreaders which farmers can rent at \$5 per day.

"Farmers like these soil sample reports, for they present the fertil-

izer problem in a very practical way," states Mr. Burton. "We can then follow up with the sale of fertilizer on our recommended basis and we can also spread it, if the farmer wishes. Through the soil sample service, we sell many customers whom we would not otherwise reach. I consider it a very sound way to build a fertilizer business."

Mr. Burton likes to stress two important facts to farmers about fer-

tilizer, namely, that it has been proved that properly fertilized land will produce pretty well even during certain drouth conditions. Also that well fertilized land will reduce the winter kill of crops. These facts are not generally known to farmers, and recital of them impresses many customers. Mr. Burton has posted on the walls of his store several farm magazine stories emphasizing these facts.

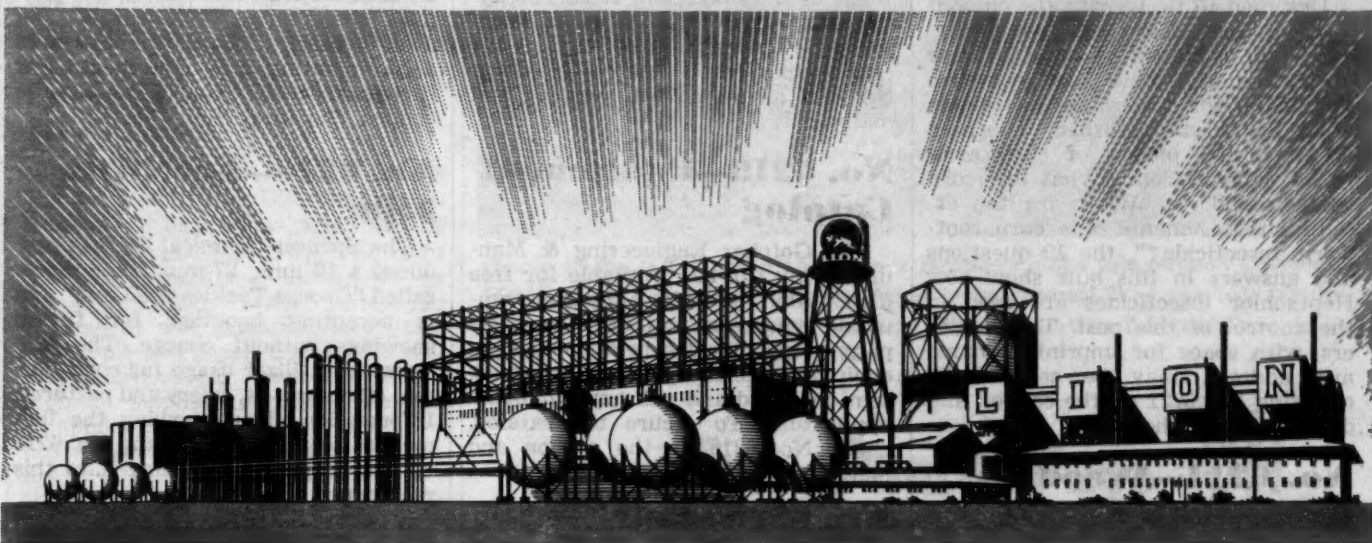
In addition this fertilizer and farm chemicals dealer uses post card mimeographed advertising seasonally, and he does some newspaper advertising. He cooperates with the high school agricultural classes and the 4-H and FFA clubs in their field projects and tours, many of which include fertilization.

This dealer also enters a float each year in the famous Milk Day Parade held at Harvard. This city claims to

be the "Milk Center of the World," and its business men and other citizens stage a one day program of festivities which attracts about 20,000 persons. A milk queen is chosen for the day, and a parade of floats is very colorful as it marches along Main Street.

After the parade the crowd gathers at a local park, where refreshments are served, and qualified speakers talk on farm problems.

Mr. Burton also sells hand and other sprayers and has a fine stock of farm chemicals. He says that many farmers are buying sprayers from \$160 and up and using more chemicals in and about the farm for weed and insect control. He credits part of this trade improvement to meetings held by farmers, county agents and farm chemical firms, plus the sales promotion of individual dealers.



How LION Helps YOU Sell NITROGEN FERTILIZERS

- ✓ Two Giant Chemical Plants Assure the Supply
- ✓ Advertising Helps Create the Demand

As a retailer, you'll find it to your advantage to sell Lion nitrogen fertilizers, because Lion's manufacturing capacity and storage facilities assure a ready supply of top-quality materials, and Lion's consistent advertising pre-sells the Lion brand.

Capacity? Lion's two giant chemical plants are now in production, making Lion a leader in manufacturing the most popular and economical types of nitrogen fertilizers not only in the South but nation-wide.

Delivery? Lion has constructed huge storage facilities to accumulate enormous stocks of the various nitrogen fertilizer materials. Even when demand is intense, you can get Lion nitrogen products.

Pre-selling? Lion's continuous advertising does an effective pre-selling job for you with your farmer customers. See list below.

Feature and sell nitrogen fertilizers with the Lion emblem on the bag, or Lion's anhydrous ammonia. You'll make sales easier, which means more profit for you.

Look To LION—A Leader In Petro-Chemicals—For Nitrogen Fertilizers

- Lion Anhydrous Ammonia • Lion Ammonium Nitrate Fertilizer
- Lion Aqua Ammonia • Lion Nitrogen Fertilizer Solutions
- Lion Sulphate of Ammonia

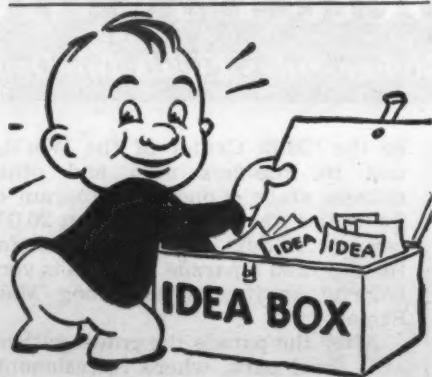
- LION FERTILIZER ADVERTISING REGULARLY APPEARS IN:**
- Farm & Ranch—Southern Agriculturist
 - Prairie Farmer
 - Progressive Farmer
 - Wallace's Farmer & Iowa Homestead
 - Leading State Farm Publications

DISTRICT SALES OFFICES:
NATIONAL BANK OF COMMERCE BLDG., NEW ORLEANS, LOUISIANA
SHEPHERD BUILDING, MONTGOMERY, ALABAMA

LION OIL
CHEMICAL SALES DIVISION



COMPANY
EL DORADO, ARKANSAS



What's New...

In Products, Services, Literature

You will find it simple to obtain additional information about the new products, new services and new literature described in this department. Here's all you have to do: (1) Clip out the entire coupon and return address card in the lower outside corner of this page. (2) Circle the number of the item on which you desire more information. Fill in your name, your company's name and your address. (3) Fold the clip-out over double, with the return address portion on the outside. (4) Fasten the two edges together with a staple, cellophane tape or glue, whichever is handiest. (5) Drop in any mail box. That's all you do. We'll pay the postage. You can, of course, use your own envelope or paste the coupon on the back of a government postcard if you prefer.

No. 6221—Corn Rootworm Folder

Designed to tie in with the current Velsicol Corp. "Kill Corn Rootworms" campaign in the corn producing areas of the nation, a new corn rootworm quiz folder for dealers and customers alike has been published. Touching on important phases of corn rootworm control from "What are corn rootworms?" to "What are the essential requirements of a corn rootworm insecticide?", the 19 questions and answers in this quiz show how Heptachlor insecticides are used in the control of this pest. These folders, with space for imprinting name and address, may be secured by checking No. 6221 on the coupon and dropping it in the mail.

No. 6211—Weed, Grass Killer

A non-selective weed and grass killer has been announced by Chipman Chemical Company, Inc. This new product is called Chlorea and is claimed to kill all types of vegetation. It is a non-separating combination of sodium chlorate, borate and CMU—chlorate for deep-rooted weeds with the prolonged soil-surface action of CMU on shallow-rooted grasses and annual seedling growth. The company announcement states: "It also has a lasting residual effect

to inhibit re-growth. Chlorea is non-poisonous and, because of its borate content, does not create a fire hazard when used as directed. It can be applied dry or used as a water-mixed spray." Further information and literature may be obtained by checking No. 6211 on the coupon, clipping and mailing it.

No. 6219—Equipment Catalog

The Gotcher Engineering & Manufacturing Co. has available for free distribution its 1955 anhydrous ammonia equipment catalog. The company's line includes field applying equipment including tractor mounted, semi-mounted and pull-type ammonia applicators. To secure the catalog, check No. 6219 on the coupon and mail it.

No. 6220—Soil Fumigant

Larvacide Products, Inc., recently announced a new addition to its line of ethylene dibromide soil fumigants sold under the trade name, Nemex. The new addition, Nemex-85, is a formulation of ethylene dibromide containing 83% by weight toxicant. The control of nematodes and certain other soil-borne pests in infested soils with the new product is said to improve root development and

vigor, increasing resistance to drouth and certain wilt diseases. Good results are claimed on infested soils on such crops as tobacco, cotton, peanuts, vegetables, ornamentals, and even in peach orchards when used as a pre-planting site treatment. For literature check No. 6220 on the coupon and drop it in the mail.

No. 6216—Fertilizer Film

The Spencer Chemical Co. has produced a 16 mm., 27-min. color movie called "George Tackles the Land" and is accepting bookings for future showings without charge. The film stresses fertilizer usage for corn, cotton, citrus groves, celery and pastures. Information about showing the film may be secured by checking No. 6216 on the coupon and mailing it to this newspaper.

Also Available

The following items have appeared in the What's New section of recent issues of Crop-life. They are reprinted here to help keep retail dealers on rotational circulation informed of new industry products, literature and services.

No. 6201—Insecticide

A new insecticide for controlling house flies and other insects has been announced by Carbide & Carbon Chemicals Co., a division of Union Carbide and Carbon Corp. It has been given the name "cyclothrin" and is chemically related to allethrin. A company announcement states that "Cyclothrin is synergized by readily available synergists to a far greater extent than is allethrin. Therefore, it can be used to advantage in oil space sprays and in low-pressure aerosols for use against house flies, gnats and mosquitoes. Cyclothrin is more effective when used in dairy and livestock sprays. Field tests have shown that treading spray concentrates containing cyclothrin afford dairy and beef animals excellent protection from horse flies. In addition, sulfoxide and piperonyl butoxide synergizes cyclothrin better than allethrin for knockdown of German roaches. Cyclothrin has the same low order of toxicity to warm-blooded animals as allethrin or pyrethrins."

The product is available at the present in limited quantities for test purposes. To secure more complete details check No. 6201 on the coupon and drop it in the mail.

No. 6204—Plant Antibiotic

Agri-mycin 100, trade name for an antibiotic spray powder, is described in a new bulletin recently released by the Agricultural Sales Division of Chas. Pfizer & Co., Inc. The bulletin's summary states: "Agri-mycin 100, an antibiotic formulation of Strepto-

mycin and Terramycin, is recommended for the control of a number of plant diseases. The possibility of building up resistant strains is greatly reduced by using this combination of antibiotics. The active ingredients of Agri-mycin 100 are readily soluble and are rapidly absorbed by the plant, providing systemic protection. Agri-mycin 100 is a stable, free-flowing, noncorrosive, fine powder intended for use in standard sprayers. To secure this bulletin check No. 6204 on the coupon, clip and mail to the address provided.

No. 6208—Pesticide

VAPAM, a new pesticide, has been announced by the Stauffer Chemical Co. Consisting of sodium N-methyl dithiocarbamate, this product is claimed to be stable in the commercial concentrated solution, but decomposes rapidly in damp soil to liberate a penetrating gas which dissipates in a few days. Under most conditions, crops may be planted within seven days after soil treatment. A general purpose soil fumigant, VAPAM is said to control practically all types of soil-borne diseases, nematodes, growing weeds and weed seeds, as well as certain species of soil infesting insects and related pests. Although especially suitable for seed bed treatment, VAPAM also shows promise for a wide range of soil problems a company releases states. The product is highly soluble in water and requires no special equipment. VAPAM can be introduced into the soil through irrigation equipment, to the plow sole, or to the ground surface in connection with the use of a rototiller. With suggested methods of application no ground coverings are required. To secure more complete details check No. 6208 on the coupon and mail to this newspaper.

No. 6199—Alkylanilines

Two alkylanilines, available in pilot plant quantities, have been added to the group of nitrogen petrochemicals made by Monsanto Chemical Company's Organic Chemicals Division. The new compounds are alkylaniline C-5, with an average of five carbons for the ring-substituted alkyl group and alkylaniline C-12, a mixture in which the alkyl group averages 12 carbons. Technical data sheets prepared by the company, which may be had on request, suggest that the chemicals be evaluated as intermediates for use in agricultural and other industrial applications. To secure additional information check No. 6199 on the coupon and drop it in the mail.

No. 6213—Lawn Fertilizer

Smith-Douglass Company, Inc., has introduced its new plant food, called by the trade name of Nutro plant food pellets, in southeastern U.S. The product is pelletized and homogenized (see photo) and literature describing it states that it is clean, dustless and odorless. Formulated with the home gardener in mind, it



can be used spread by hand or with a spreader. It is not necessary to rake or wash down the fertilizer, it is claimed, since the pellets bounce off the leaf to the ground. It is packaged in 10, 25, 50 and 100-lb. bags, and comes in two forms—regular or instant. The instant form dissolves in water, and can be used for foliage

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| <input type="checkbox"/> No. 6202—Spit Duster | <input type="checkbox"/> No. 6216—Fertilizer Film |
| <input type="checkbox"/> No. 6204—Plant Antibiotic | <input type="checkbox"/> No. 6219—Catalog |
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The Bulletin Board

No. 7 in a series from the Spencer Chemical Company Magazine, "Today's Fertilizer Dealer."



Heavy traffic is typical of the Turner Brothers store just outside Chillicothe, Mo. A lot of folks figure it's the place to go because they can ask fertilizer questions and get responsible answers. This reputation for know-how is just part of the Turners' success story.

One-Two Punch Pays Off For the Turner Brothers

With \$1,000 and a truck Lloyd Turner became a fertilizer dealer in 1949. In just five years the Turner Brothers store outside Chillicothe, Mo., has become one of Missouri's finest fertilizer emporiums. It's easy to see why when you know the one-two sales punch Lloyd and his brother Reuben have developed.

Soil testing is the first part of the Turners' one-two merchandising program. In the last two years they have paid out \$1,500 for "free tests" —"augering" the samples themselves if necessary, taking them to the county lab in Chillicothe and paying \$1 for the autopsy. The lab sends the results back to the Turners, and they notify the farmer of the verdict.

They attribute 80% of their sales to this soil testing program. But they're not just "skating on the rink." They helped build it, contributing about one-fourth of the cost of establishing the soil testing lab.

Of course a soil test can't book fertilizer orders by itself. That's where the second part of the Turners' punch comes in. They're both blessed with an excellent fertilizer background, and combine their know-how with the tools of the trade. All soil test

sheets are filed alphabetically for reference, along with a ledger account of fertilizer sales. They are also planning a sales tickler file, to uncover a customer when he is ripe for consideration.

The Turners often make use of a "soils map," a book-size affair made up by the University, with complete details on every farm in the country. With additional information on plant food removed by crops, they can make a recommendation without a test that they say is "a whole lot better than a guess."

Here are more ideas from the Turner operation: About 85% of their fertilizer is delivered, and last year a lot of sacked goods ran through a bulk truck. They get mileage out of one spreader because, as they point out, "our boys" don't mind working hard when the occasion demands.

Advertising varies with the season. They make use of radio, newspapers, road signs, calendars, mechanical pencils and "leather-type" note pads. But they contend their best advertising medium is the rural grapevine. When business slows down, they average two days a week in farm-to-farm contacts.

No. 6215—Cotton Herbicide

Geigy Agricultural Chemicals has announced a new herbicide for cotton. Designated as Geigy 444, the compound is 2-chloro-4, 6-bis-(diethylamine)-s-triazine. Excellent results as a pre-emergence and post-emergence herbicide, in directed as well as overall applications are claimed. Rates as high as 24 lb. per acre have been applied as pre-emergence treatments without phytotoxic effects. Directed and overall post-emergence sprays, applied at a rate of 12 lb. of the product per acre produced no reduction in growth. Slight burning resulted from overall applications. Successful tests on other crops, including lima beans and peas, have been made, with varying control of nutgrass, broadleaved weeds and annual grasses being obtained. For further information and experimental quantities, qualified research personnel are invited to check No. 6215 on the coupon and drop it in the mail.

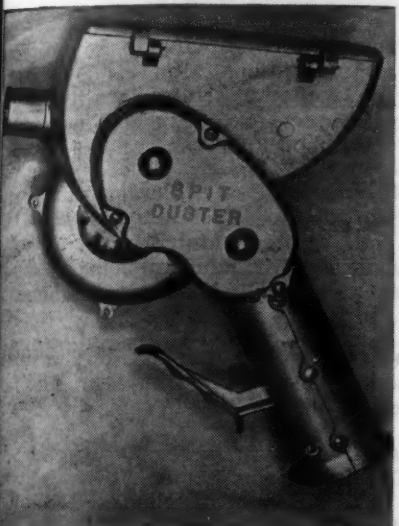
No. 6214—Fertilizer Brochure

A new brochure entitled, "Make Bigger Profits with USS Ammonium Sulphate," has been published by United States Steel Corp. The color brochure presents a breakdown by crops (corn, oats, wheat, barley, rye permanent and supplementary grass and apple and peach trees) with recommendations for quantities of ammonium sulphate per acre, method of application, when to use and various suggestions for its use. Sections are devoted to fall application of fertilizer and returns possible through use of the company's product on pastures and small grains. Check No. 6214 on the coupon, clip and mail it to secure the brochure.

and root feeding. In liquid form it can be sprinkled on leaves for foliage feeding, poured around the roots as a starter, or sprayed on large areas. Instant Nutro, it is explained, can also be used in the dry form. Also being manufactured is Nutronite, an all organic (animal waste) fertilizer with 9% nitrogen. To secure literature describing these products check No. 6213 on the coupon and drop it in the mail.

No. 6202—Hand Spit Duster

A new insecticide spit duster which can be operated with one hand, leaving the other hand free to move foliage or to hold plants, is available through the distributors of Raw Materials Trading Co. The dust projection distance is 12 ft., and the duster



holds 5 1/4 oz. of material equal to 7 min. of dusting. The weight of the duster, which will find its use among home gardeners, nurserymen, and others, is 5 1/4 lb. To secure more complete details check No. 6202 on the coupon and drop it in the mail.

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ISOTOX 25 Seed Treater F controls wireworms, seed corn maggots, and other soil insects—also gives added disease protection at planting time

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What's Been Happening?

This column, a review of news reported in Croplife in recent weeks, is designed to keep retail dealers on rotational circulation up to date on industry happenings.

A new firm, Diamond Black Leaf Co., was announced Feb. 24. Diamond Alkali Co., Cleveland, will acquire Virginia-Carolina Chemical Company interest in the new firm during the next five years, according to the agreement. The new firm will be managed by Diamond Alkali. Loren P. Scoville and Dr. Bruce G. Gleissner will serve as general manager and assistant general manager, respectively, in the new firm.

A new attendance record of over 500 was noted at the Feb. 17-18 meeting of the Middle West Soil Improvement Committee in Chicago. Speakers represented colleges and universities in the 13 states involved, and included industry representatives.

The U.S. Commerce Department predicted record sales of chemical and allied products in 1955, with gains seen in the use of fertilizers and pesticides.

Construction started on an ammonium nitrate plant to be operated by Brea Chemicals, Inc., Los Angeles. . . . International Minerals & Chemical Corp. announced that it is expanding its potassium sulfate producing facilities at Carlsbad, N.M. . . . Stauffer Chemical Co. completed a new insecticide and fungicide blending plant at Lubbock, Texas.

Procedural regulations for the establishment of safe tolerances for pesticide chemicals used on food crops are to go into effect March 6, the U.S. Department of Health, Education and Welfare announced Feb. 9.

Robert Campbell, acting president of the new St. Paul Ammonia Products Co., announced that the firm would erect a \$15 million anhydrous ammonia plant near St. Paul.

Fertilizer mixers, replying to a Croplife survey on the 1955 business outlook, said a balance of supply and demand appears likely this year. The fall fertilization program was reported to be making headway in some areas.

The 1955 corn allotment was set at 49,842,697 acres, an increase of 8% over that of last year. . . . Organization of Calumet Nitrogen Products Co., a new firm that will build an ammonia plant at Hammond, Ind., was announced by Standard Oil Co. (Indiana) and Sinclair Refining Co.

Sales of East German potash below domestic prices threaten to produce a loss of at least \$25 million to the U.S. potash industry, it was stated at a U.S. Tariff Commission hearing on the imports. . . . The U.S. Department of Agriculture reported that a serious corn borer infestation is likely this year in the Midwest if weather conditions are favorable for the insect's development.

International Minerals & Chemical Corp., Chicago, announced plans for a more than \$1 million expansion program for its potash plant at Carlsbad, N.M.

Regulations governing certification by the U.S. Department of Agriculture of the usefulness of pesticide chemicals as authorized under the Miller Bill were issued by USDA.

The carry-over of 26 major pesticidal chemicals in the hands of manufacturers is down about 10%, according to a USDA report issued Jan. 13. . . . A huge spraying project to control spruce budworm in eastern Canada in 1955 was announced. Some 2 million acres of timberland are due for treatment. A similar project in the western states of the U.S. was foreseen for 1955 with some 900,000 acres slated for spraying by plane against spruce budworm.

Oregon's spray and dust applicators met at Corvallis and heard talks warning against carelessness in disposing of empty containers and in handling chemicals. . . . Richard P. Porter, formerly of Ethyl Corp., was named vice president of Larvacide Products, Inc., New York.

Numerous state meetings were held. Cotton States Branch of Entomological Society of America met at Tampa, Fla. and elected H. C. Young, USDA as chairman. . . . The Southern Weed Conference met Jan. 17-19 at St. Petersburg, Fla. with 300 in attendance. G. C. Klingman, N. Carolina State College, Raleigh, was named president of the Conference.

Colorado Fertilizer Conference was held on the campus of Colorado A & M, Ft. Collins. That fertilizer can largely compensate for lack of moisture in dry years, was emphasized by speakers. . . . Mississippi Insect Conference at State College was held early in January featured well-known speakers.

Croplife's issue of Jan. 17 carried stories about new plants in the east and midwest. Northern Chemical Industries completed plans for a \$9 million anhydrous ammonia plant at Searsport, Maine; and U.S. Industrial Chemicals Co. announced plans to dedicate its new \$7 million plant at Tuscola, Ill. on Jan. 21.

More than 500 attended the Northeastern Weed Control Conference in New York. John Van Geluwe, GLF Soil-Building Service, Ithaca, N.Y., was named president of the group for 1955. . . . The pesticide trade may benefit from new emphasis on grain sanitation, John Clipperly, Croplife's Washington reporter said. Use of the provisions of the Miller Bill will help in this regard, since residual tolerances may now be set.

Grace Chemical Co. formally dedicated its \$20 million ammonia-urea plant at Memphis, Tenn. Jan. 6. Plant had been on stream since middle of December. . . . Standard Oil Co. of Ohio named H. H. Tucker and H. J. Coleman to new posts in its new Lima, Ohio, project. The firm is building a new \$17,000,000 petrochemical plant for production of anhydrous ammonia, nitrate solutions, urea and nitric acid.

Future weed control progress will be made more difficult as problems become more demanding for specificity, the Northeastern Weed Control Conference in New York was told. . . . Mid-South Chemical Co., Memphis, announced plans for a \$1 million anhydrous ammonia terminal in the Memphis harbor.

Entomologist Puts Finger on Virginia's Worst Insects

BLACKSBURG, VA.—Ten insects have won the dubious honor of being "most important in Virginia." They and their cohabitants of the insect world are credited with damages amounting to an estimated \$1,031,000 to crops in Virginia last year. And without the control practices which were followed, they would have caused additional losses of some \$523,000, says Arthur P. Morris, associate entomologist at Virginia Polytechnic Institute.

Mr. Morris has just compiled reports from agricultural workers throughout the state, and here is his list of the 10 most important insects: corn earworm, termite, house fly, rice weevil, lice of domestic animals, southern corn rootworm, meadow spittlebug, hornworm, aphid and spider mite.

Principal crops injured by the earworm were corn, soybeans, peanuts, and grain sorghum. In the southeastern counties, yield of soybeans dropped an estimated 4% because of the insect, and in the eastern counties the figure was 10 to 15% loss in late-maturing soybeans.

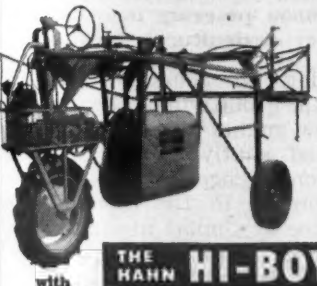
The southern corn rootworm, which caused an estimated \$1,000,000 damage to peanuts alone, was also present in practically every field of corn, alfalfa, clover, soybean and pasture in the Tidewater area. Adult infestations of the meadow spittlebug ranged from light to heavy all over the state.

Not included in the estimated loss figure were the household insects, insects affecting man and animals, and insects in stored products.

NORTH CAROLINA TESTS

RALEIGH, N.C.—Only about 4% of North Carolina farmers have submitted samples of their soil for testing in the past two years, according to reports of the state Soil Testing Laboratory and Department of Agriculture. Still, 85% of the soils that were tested were below the minimum pH requirement, and 80% showed deficiency in potash.

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Cotton Contest Set Up In Mississippi

STONEVILLE, MISS.—An ambitious new program to promote the production of more lint for less on Mississippi cotton farms in 1955 has been launched by the Mississippi Extension Service and cooperating agricultural organizations.

The contest will be based on the total acreage in cotton on a farm, with two bales per acre for the entire cotton unit as the goal.

The farm contest is being staged to stimulate economic production of higher cotton yields per farm for greater net profit, T. M. Waller, extension cotton specialist, said. Applications for the contest may be taken by any agricultural worker and must be turned in to the county agent's office before June 1.

Both white and Negro farmers are eligible and cash awards will be made.



AT TENNESSEE MEETINGS—Committee members and guest speakers at the recent series of Tennessee fertilizer and seed dealer meetings are shown above. From left to right are Lewis Dickson, University of Tennessee associate agronomist; Webster Pendergrass, chairman of the meetings; James R. Turner, Pacific Borax Co., Knoxville; Gilbert Owen, administrative assistant, Agricultural Conservation Program, Nashville; E. C. McReynolds, associate director agricultural extension service, University of Tennessee; Bennett Brown, assistant treasurer, Knoxville Fertilizer Co.; Dan Mayo, Mayo Seed Co., Knoxville, and L. N. Skold, associate agronomist, University of Tennessee. For a story of the meeting see page 1 of the Feb. 21 Crophlife.



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Suggested amounts for mixing with pest-control sprays are given in the chart at the right. Less concentrated solutions may be used, depending on the frequency of spraying and the specific nitrogen needs of your particular crop and soil.

Pounds GRACE UREA PRILLS suggested per 100 gals. Spray

VEGETABLES	LBS.
Tomatoes, cucumbers, cabbage, cauliflower, celery, lettuce, peppers, snap-beans, sweet corn, strawberries	4-5
Sweet potatoes	5-10
Potatoes	15
Carrots, parsley	20
FRUITS	
Apples	3-5
Cherries	5
Citrus	5-7 1/2
Plums and prunes	10



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Spread of Yellow Clover Aphid Seen in California

BERKELEY, CAL. — The yellow clover aphid, one of the fastest spreading insect pests ever to invade California, may move into alfalfa fields in the San Joaquin and Sacramento Valleys this spring.

This possibility is foreseen by scientists of the University of California, who are currently seeking more effective control measures for the prolific insect, believed to be the most serious pest ever to threaten alfalfa.

First found in serious numbers near Yuma last June, the aphid has spread throughout Imperial and Riverside counties. It has been reported near Barstow and Lancaster and entomologists from the Citrus Experiment Station are now checking fields in Kern County to the north.

Several of the newer insecticides are effective against the pest, according to Lauren D. Anderson and Dr. Harold Reynolds, but the winged aphid covers ground so rapidly that

a treated field may soon be reinfested.

Dr. Robert C. Dickson, a specialist on aphids and related pests, is now seeking facts that may render control measures more effective. Believed to have originated in northwest India, the yellow clover aphid is most destructive in warmer areas. However, it appears to survive in the low temperatures currently occurring in the Southland desert areas.

Bigger Apricots with Insecticide Reported

WENATCHEE, WASH. — Application of small amounts of 2,4,5-T at the right time can result in bigger apricots, according to Dr. L. P. Batjer, U.S. Department of Agriculture pomologist here.

Dr. Batjer told the annual meeting of the state horticultural society that larger apricots can be grown by spraying trees at the pit-hardening stage with amine form of 2,4,5-T. Recommended concentration is 50 parts per million. Ester form should not be used, he said.

Outbreak of Red Spider Mite, Alfalfa Weevil Seen in New Jersey This Year

TRENTON, N.J. — Severe damage by the red spider mite and, in some sections of the state, from the alfalfa weevil appears likely in New Jersey during 1955, according to Dr. Leland G. Merrill, Jr., extension specialist in entomology at Rutgers University.

He also noted that the New Jersey State Department of Agriculture is on the alert for a possible outbreak of the gypsy moth, inasmuch as a single gypsy moth egg mass was found in North New Jersey, near the New York state line.

Dr. Merrill's comments on the 1955 insect outlook in New Jersey follow:

"The alfalfa weevil, *Hypera postica*, is apparently increasing its range and the intensity of infestation. Only the extreme northeast counties of New Jersey are not infested with this pest at present. In the counties south of Camden, severe damage can

be expected in 1955 from the activities of this pest on alfalfa planting.

"The white-fringed beetle, *Grapta leucoloma*, race imitator, has been discovered in the Vineland section of Cumberland County, N.J. At present the infestation is apparently limited to about 45 acres but intensive survey is being carried out to discover if other foci of infestation do not already exist in the state. A campaign to attempt to control the infestation is under way.

"The European corn borer, *Pyrausta nubilalis*, has not caused serious damage in the past three seasons. Overwintering larval abundance surveys carried out cooperatively with the New Jersey Department of Agriculture indicate that the population is now at a low level, even lower than the fall of 1953.

The outlook for trouble from the European corn borer in 1955 looks very slight. Unless weather conditions are unusually favorable at the time of moth flight and egg deposition, damage should be light in all areas. The heaviest area of infestation at the present time is Burlington, Camden and Gloucester Counties.

"Due to the fact that the populations of the two-spotted red spider mite, *Tetranychus bimaculatus*, were extremely heavy in 1954, there is a very strong possibility of severe infestation in 1955. Unless overwintering conditions are very unfavorable to the mites, there is a strong possibility of more trouble than usual from this pest."

Plans Being Made For South Carolina Fertilizer Meeting

COLUMBIA, S.C. — The annual South Carolina fertilizer meeting will be held at the Sandhill Experiment Station at Columbia on June 2, according to an announcement by Dr. Bruce D. Cloaninger, Clemson Agricultural College, Clemson, S.C.

An invitation to attend is extended to fertilizer manufacturers, dealers, salesmen and other interested agricultural workers. Present plans for the program call for a tour of the experiment station, a luncheon at the station and an afternoon program including talks by key agricultural workers.

During the course of the afternoon, the group will be shown through the new animal diagnostic laboratory operated jointly by the USDA and Clemson college.

According to Dr. Cloaninger, attendance at similar meetings in past years has attracted as many as 400, a large portion of whom were fertilizer dealers. Dr. Cloaninger urges attendance of more dealers, since they play "a most important part in molding and carrying forward a progressive fertilizer program," he says.

New Virus Disease Invades California

DAVIS, CAL. — Chemical disease killers may be brought into play to fight a new virus disease which has begun to invade clover seed fields in California during the past year.

University of California researchers have described the virus as aster yellows, which caused yellowed, deformed plants which fail to set seed. It is spread largely by leafhopper insects, according to Luther G. Jones, agronomist on the Davis Campus of the University, who discovered the virus and is starting to make experiments on its cause and control. The disease has also affected pumpkins and squash, and was isolated from strawberries by Norman Frazier, entomologist on the Berkeley campus.

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SAFETY WINNER—The Smith-Douglass Co. Norfolk plant was presented the president's Safety Award for 1954 Feb. 9, by lowering its accident record of six lost time accidents, including one fatality in 1953, to three lost time accidents and no fatalities in 1954. The trophy, a traveling award, is presented each year to the Smith-Douglass plant with the best safety record. Above, Herman G. Powers, Norfolk plant manager, left, receives the trophy from Vernon Gornto, S-D safety director. J. H. Swemer, general manager of research and development, under whose direction come both plant safety and production, observes. The trophy was held during 1953 by the company's Streator, Ill., plant, and last year by the Norfolk plant of the Smith-Rowland Division.

Screwworm Fly Eradicated From West Indian Island

WASHINGTON — Eradication of the screwworm fly from the West Indian island of Curacao has been announced by the U.S. Department of Agriculture. This feat was accomplished by entomologists of USDA's Agricultural Research Service in cooperation with officials of the Netherlands West Indies.

Department officials said the accomplishment sets the stage for a similar eradication effort against this insect in the U.S. where it causes livestock losses totaling \$20 million.

Both atomic energy and a knowledge of the biology of the screwworm fly were combined to wipe it out of Curacao. Female screwworm flies mate only once. Entomologists exploited this fact by saturating the wild population with thousands of laboratory reared male flies, made sterile by exposure to gamma rays from radioactive cobalt supplied by the Oak Ridge (Tenn.) National Laboratory.

Success of the Curacao campaign depended upon the degree of infiltration that could be achieved by release of sterile males. (In theory, if release was at the rate of five sterile males to every normal male, the new generation should be 80 percent lower than normal.)

On Curacao, first sterile males—2,000 of them—were evenly distributed over the island from a plane on March 26, 1954. After that, entomologists maintained a release rate of 100 sterile males a week for each of the island's 170 square miles. Later the release rate was raised to 400 males per week. Not a single screwworm fly has been trapped nor have any eggs been obtained since November 4, 1954. Neither has anyone reported screwworms in livestock or other animals.

Although in the U.S. screwworms occur both in Florida and Texas, and each year move north into surrounding states, entomologists believe the Florida infestation can be handled in the same way as the one on Curacao—as an isolated infestation. Each winter, cold weather pushes the screwworm survival line deep into Florida. This, the entomologists believe, would be the time to strike.

SOIL MOISTURE NORMAL

URBANA, ILL. — Soil moisture is nearly normal in Illinois except in the area centering around Shelby county, according to spot checks made by agronomists at the University of Illinois.

Safetygraphs on First Aid Available

CHICAGO — Three new safetygraphs on first aid are now available from the National Safety Council.

"How to Control Bleeding" illustrates the latest techniques in the field, including new research by the Committee of Medicine of the National Research Council.

"First Aid Treatment for Burns" discusses what to do for burns, frostbite, radiation and electric burns, as well as chemical burns of the skin and eye.

"Transportation of Injured Persons" covers examinations of injured persons to determine spine or neck injuries, and use of common industrial equipment to transport injured persons.

The safetygraphs provide a ready means of training small groups. Consisting of 12 spiral-bound pages, 18x24 in., inserted in a brown leatherette portfolio, the safetygraph can be set on any flat surface and opened to form an easel. On the pages facing the audience are large, clear drawings. On the back pages in easy-to-read type are notes for instructors.

Further information and prices may be obtained by writing the National Safety Council, 425 N. Michigan Ave., Chicago 11, Ill.

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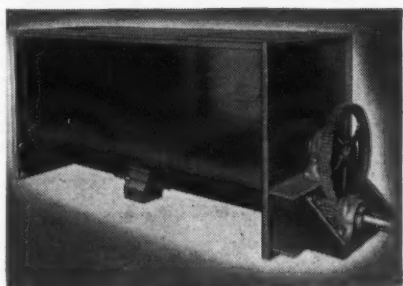
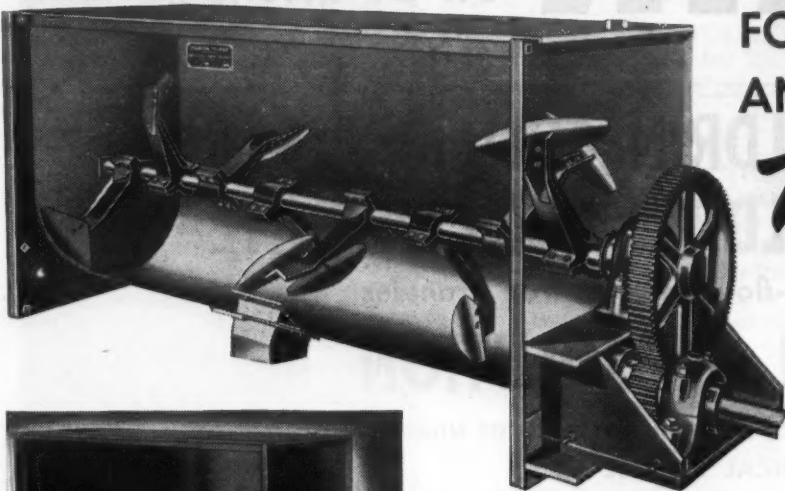
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Experiments in Grape-Thinning with Chemicals Reported

BERKELEY, CAL.—Spray chemicals may become a practical means to thin grapes within a relatively short time, according to a University of California researcher who has made a number of recent experiments in this field.

Viticulturist Robert J. Weaver cautions crop growers, however, that "results at present aren't really satisfactory." He says in outlining the present progress, that "We can't say we really have the thinning action under control."

The report gives as an example, the case of application of alpha-naphthaleneacetic acid in concentrations of 100 ppm, which produced thinning of just the right amount last season. But during the current calendar year the same application caused serious overthinning.

"A farmer who treated his vineyard on the basis of last year's results might possibly lose his crop," the researcher said. "Obviously a good deal of further research is needed to establish the factors that make the thinning action so variable."

Mr. Weaver began his thinning studies three years ago. He has at different times applied as many as 17 different defoliant, thinning agents, and growth regulators in different concentrations and at different times. He describes the problem of thinning

grapes as much more complicated than the thinning of tree fruits, because grapes bear in clusters, and flowering occurs six weeks after the shoots begin growth, making leaf damage from spray a real hazard.

In addition, problems are posed by the various characteristics of grape varieties, the different methods of pruning and training vines, and the several purposes for which grapes are raised. Mr. Weaver thinks that if spray thinning proves practical, a number of techniques will be needed for the many different situations.

Further work is planned on five compounds that show promise as grape thinners: alpha-naphthaleneacetic acid, sodium monochloroacetate, sodium dinitro-ortho-cresylate, ammonium - dinitro - ortho-sec-butylphenate, and sodium dinitro-orthocyclo-hexylphenate.

Wesley D'Ewart Named Aid to USDA Secretary

WASHINGTON — Secretary of Agriculture Ezra Taft Benson has announced the appointment of Wesley A. D'Ewart, Wilsall, Mont., as special assistant to the secretary.

Mr. D'Ewart has owned and operated a livestock farm in Park County, Mont., since 1918. He was a member of Congress from the second district in Montana in 1945-54.

He will serve as liaison between Congress and the USDA.

WEED SEEDS

FARGO—A circular entitled "Weed Seed Facts" has been prepared by O. A. Stevens, North Dakota Agricultural College botanist. According to the circular, a pure stand of Frenchweed was found to produce 150,000 seeds per square yard; a single Frenchweed plant had 7,040 seeds. Burdock was found to have 31,600 seeds on one plant; common mustard 2,700 seeds; purslane 52,300; Russian thistle 24,700; marsh elder 82,150. The No. 1 seed producer among those on which data were compiled by Dr. Stevens is wormwood, with 1,075,000 seeds on one plant.

Four New Insects Reported in Idaho

MOSCOW, IDAHO—Four new insects are chewing on Idaho crops, reports Roland Portman, University of Idaho extension entomologist.

The brown wheat mite has appeared in southwestern Idaho. The pale western cutworm appeared near American Falls and may be expected in any dryland area. The Mexican bean beetle was found near Twin Falls and the lesser grain borer near New Plymouth.

All have been reported since the appearance of the 1954 edition of "Idaho Recommendations for Insect Control."

50,000 Acres in Connecticut Under Gypsy Moth Threat

NEW HAVEN, CONN.—Scouting for the gypsy moth is about three quarters completed for the season and about 50,000 acres in Connecticut have been found where serious defoliation is threatened, according to Neely Turner, chief entomologist at the Connecticut Agricultural Experiment Station. The figure compares with 150,000 heavily infested acres which had been found by the same date last year.

Scouts from the Experiment Station have now covered most of the area sprayed for gypsy moth last year and all of the area in which infestations in 1954 were so heavy that a possible outbreak was indicated for this year. In charge of the scouting is O. B. Cooke, entomologist on the station staff.

In the areas sprayed last year only one small spot was found where a serious infestation is now threatened. This occurs in the town of Litchfield and consists of about 200 acres. Most of the current infestation is in the area south and west of the portion of the State where outbreaks occurred last year.

The list of towns where serious infestations are threatened and the acreages involved is as follows: Canaan (1,500 acres), Cheshire (6,000 acres), Cornwall (6,600 acres), Goshen (1,100 acres), Harwinton (10,000 acres), Litchfield (1,200 acres)—this includes the 200 acres referred to above and the 1,000 acres not sprayed last year, Morris (1,200 acres), New Hartford (4,000 acres), North Branford (700 acres), North Canaan (1,100 acres), Plymouth (3,500 acres), Thomaston (350 acres), Torrington (10,000 acres), Warren (2,000 acres) and Wallingford (1,100 acres).

Scientific Methods Turn Out Cotton Yield of 2.81 Bales

STANTON, TEXAS—Woody Smith, local farmer, has cotton growing down to a science. On 92 acres of irrigated cotton last year he averaged 2.81 bales per acre.

This is the county's highest production in history and may perhaps be a record for all of West Texas. At least it is on the kind of soil Smith farms, which is somewhat shallow and drouthy, with an average depth of only eighteen inches.

Yet he overcame the handicap of poor soil by these methods: first, he spent several weeks last winter leveling his field with farm equipment.

Then he carefully laid out his ditches according to engineering done by the Soil Conservation Service. At planting time he used a high quality long staple cotton, carefully cultivated it, and then just as diligently fought off hordes of fleahoppers, red spiders and green boll worms by regular spraying and dusting.

He applied 40 lb. anhydrous ammonia early in the year, then later applied a total of 275 lb. 15-15-0 in the form of sidedressing.

Mr. Smith attributes the high production to three things: proper irrigation, insect control and fertilizers. "It takes all three to grow cotton," he says. "If you slight any one of them you may end up in the red because the three go together like the legs of a three-legged stool."

"The day of haphazard farming is over, particularly in irrigation. The age of science is here in agriculture and the farmer who doesn't farm accordingly is not likely to be in the business long."

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WORLD REPORT

Industry News from Everywhere

By GEORGE E. SWARBRECK
Croplife Canadian and Overseas Editor

Canadian officials are concerned about possible hazards arising from the drift of 2,4-D, and operators have been advised to apply herbicides in such a way as to avoid drift of the material to areas where it can cause damage to crops. Spearheading this thought is the agricultural experiment station at Morden, Ont., which issued a recent statement in this connection.

"It is apparent," it said, "that if this problem is not remedied soon by educational methods, the farming public will demand legislation restricting the use of volatile ester forms of 2,4-D." The station revealed that experiments had proven that the yield of sweet clover seed was reduced about 25% by damage from the application of 2,4-D.

Also commenting on herbicide application problem was Dr. Reginald Shuel, member of the staff of the Ontario Agricultural College at Guelph. Speaking before a conference of apiculturists at Winnipeg, he pointed out that the application of 2,4-D to plants reduces their nectar secretion. The greatest danger of 2,4-D and of insecticides, he said, lies in their drift. His findings in this connection are in accord with the results of a University of Saskatchewan experiment reported last fall.

Because of the concern about damage due to drift, the conference decided to ask provincial administrations to publish pamphlets urging greater care in the use of sprays. Only three provinces officially advise such precautions now, and it is expected that the warnings will be extended to all Canada.

Additionally, the beekeepers propose to ask for representation on the Western Canada Weed Conference. In that way, they feel, it will be possible to organize greater coordination of effort.

Indian Developments

No money is being spared by the Indian government and the authorities in the various states to develop agriculture. Typical of many schemes now being prepared is one by the administration in the state of Himachal Pradesh. There the accent will be on increasing the use of fertilizers.

Loans are to be given to cultivators so that they may be in a position to purchase fertilizers. Also up for consideration is a plan to provide a subsidy on internal transportation charges. Another scheme provides for the setting up of plant protection organizations in all districts.

Fire Hazard

The dangers of fire from empty nitrate bags have been underlined by F. L. Kerr, director of Australia's emergency fire service.

Mr. Kerr points out that the nitrate content of nitrogenous fertilizers is susceptible to spontaneous combustion and, moreover, can be ignited from sparks that may fall on the bags. Empty bags should be packed securely on trucks so that they cannot blow off on to the grassy verge of the road.

Reconstruction

The Power Gas Corp., Ltd., Stock-on-Tees, England, has secured a contract for the reconstruction of

the existing sulfuric acid plant at the Flixborough works of Nitrogen Fertilizers, Ltd. The alterations will be made to the design of the German firm Chemiebau Dr. A. Zieren G.m.b.H., and will provide a converter unit with a monohydrate capacity of 140 tons a day, an acid separator, waste heat boiler and ancillary equipment. Because of careful planning, officials believe there will be no need to shut down the present plant during reconstruction.

DEMONSTRATIONS PLANNED

LEXINGTON, KY.—Henry County Ky. bankers have announced plans to sponsor demonstrations on the value of fertilizers for several crops.

POTASH IMPORTS

(Continued from page 1)

found no injury expressed the view that future imports of muriate of potash from the Soviet Zone of Germany, a Communist-controlled country, should be closely observed and that a review of the application of the Antidumping Act should be initiated in the event that imports involving sales below fair value increased to such an extent as to warrant a review.

Accordingly the Treasury has advised the Tariff Commission that it will continue to maintain close observation over such imports.

The decision now appears to close the door on further action for at least a year. It retains the present competitive marketing situation, which existed for some time, wherein imports of East German potash can move inland for a considerable distance in competition with U.S. potash produced in Carlsbad, N.M., which moves east by rail.

Trade sources told Croplife that the decision fails to take into consideration some basic domestic aspects

which are attributed to the impact of East German potash imports. These sources say that muriate of potash is currently selling f.o.b. Carlsbad at prices equal to those prevailing in the U.S. in 1939.

It is sensed in some quarters that the appearance of the American Farm Bureau Federation representatives, to urge maintenance of the flow may have been the major influence in swaying the tariff commission to its split decision.

It also is noted here that the Tariff Commission split was, strangely, along party lines, with Democratic members finding no area of complaint in regard to the imports and Republican members sensing injury to the domestic potash industry.

JOIN MCA

WASHINGTON—The Girdler Co. of Louisville, and Cosden Petroleum Corp. of Big Spring, Texas, have joined the Manufacturing Chemists' Assn., that organization announced here recently.

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STANDARD AWARD — Wayne L. David of Burden, Kansas, is shown receiving the \$300 annual Standard Milling Co. award for outstanding undergraduate work in agronomy at Kansas State College. Mr. David worked in the agronomy department throughout his college career. He helped with improvement work in soybeans and other crops and with the weed control project.

Martin Poyner Resigns As Wyoming Entomologist

CHEYENNE, WYO.—Martin Poyner has resigned, effective Feb. 28, as Wyoming state entomologist, according to an announcement by William L. Chapman, state agriculture commissioner. Everett Spackman, who was deputy state entomologist, has been appointed to the post.

Atomic Energy Conference

PALO ALTO, CAL.—Applications of atomic energy in the food industry, including cold sterilization and irradiation of insects, will be among topics discussed at the first West Coast conference on applied industrial uses of atomic energy. The conference will be held April 4-5 at Mark Hopkins Hotel, San Francisco, and is sponsored by the Stanford Research Institute and the Atomic Industrial Forum, New York.

USDA Urges Farmers to Grow Hay, Forage on Diverted Acres

WASHINGTON—True D. Morse, acting secretary of agriculture, Feb. 28 urged farmers of the nation—when considering their spring planting plans—to give full consideration to planting soil-building and conserving crops on land they divert from the production of the basic crops—wheat, cotton, corn, tobacco, rice, and peanuts. Special attention should be given to production of needed hay, pasture and forage crops to promote more efficient and profitable farming, he said.

"In many areas there is not enough land in pasture and hay adequately to support livestock now on farms," Mr. Morse said, "especially the all-time record number of cattle. Cattle numbers this year in this country total 95.4 million head, which is more than ever before. Last year cattle numbers were 1,150,000 over the 1953 number, and this year they are 650,000 more than they were in 1954.

"The nation's experience with drouth during the past three years has further demonstrated that most farmers do not have enough pasture and hay reserves to protect their livestock operations, and the threat of drouth is still with us here in 1955," said Mr. Morse.

Under provisions of controlling legislation, Mr. Morse explained, acreage allotments and in most cases marketing quotas have been established for 1955 production of the basic crops, the 1955 national acreage allotments of which are as follows: corn, 49,482,697 acres, applicable to the 805 counties in the commercial corn area; cotton, 18,113,208 acres; peanuts, 1,610,000 acres; rice, 1,589,099 acres; tobacco, 1,576,151 acres, and wheat, 55,000,000 acres.

Compared with 1953, when acreage allotments did not apply for these crops, this means a reduction of 6,850,000 acres of corn, 7,000,000 acres for cotton, about the same acreage of peanuts, 320,000 acres for rice, 126,000 acres for tobacco and 23,700,000 fewer acres of wheat. Thus, full compliance with acreage allotments as established for 1955 would mean between 35 and 40 million acres diverted as compared with 1953. Compared with 1954, it would mean that about 9½ million acres would need to be diverted.

Mr. Morse also points out that in farmer referendum marketing quotas have been approved in 1955 for cotton, peanuts, rice, wheat and for all types of tobacco except Maryland and Pennsylvania cigar-filler Type 41 tobacco. Marketing quotas will not apply to corn in 1955. The Agricultural Act of 1954 excludes corn from the marketing quota provisions of the law.

Mr. Morse explains that "the sole purpose of the acreage allotment and marketing quota programs is to aid in attaining a more balanced production and in bringing supplies more nearly in line with demand."

"In view of the situation confronting farmers in 1955, an important objective of the U.S. Department of Agriculture will be to encourage and assist farmers to divert to soil-conserving and other desirable uses any acreage taken out of production of the acreage allotment crops," he said.

Mr. Morse emphasized that good pastures and high quality hay and forage are essential in supporting our heavy livestock population. He also pointed out that availability of such crops was a prime means of cutting livestock production costs and expanding income from beef cattle, dairy cows, sheep and hogs.

Mr. Morse reiterated that the Agricultural Conservation Program

will share with eligible farmers the cost of approved conservation practices on diverted acres as well as on any other farm land. In 1955, this includes sharing the cost of seeding permanent vegetative cover to increase the acreage of sod crops seedings to keep the land under temporary protective cover during the current year, and stubble mulching on land needing temporary protection from wind and water erosion. Other approved practices include moving earth for terracing, and erosion-control dams.

The department pointed out that it also was emphasizing the use of its other land-use programs in assisting producers in the important task of diverting acres away from production of the basic crops to grow the roughage needed in balancing livestock rations and in carrying out sound conservation practices.

Relation Between Sprays, Smog Being Studied

RIVERSIDE, CAL.—University of California scientists here are studying the relationship of smog damage and insecticide sprays on citrus groves. Some previous work at the university has indicated that it is possible to reduce plant damage from smog by use of special sprays.

However, Dr. James B. Kendrick and Dr. Glenn E. Carmen, who are in charge of the current project, say that their study is so new that no definite results are available. The first experiments are being conducted with common citrus sprays.

SOIL COOPERATORS

DES MOINES—Nearly 50,000 Iowa farmers are now cooperating with soil conservation districts, according to Frank Mendell of the U.S. Soil Conservation Service.

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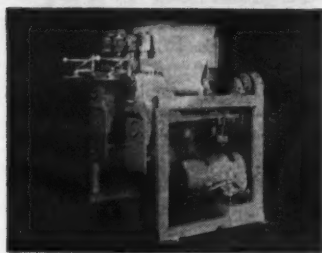
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Grow Net Fertilizer Sales of Co-ops in 1952-53 Top \$216 Million

WASHINGTON — Estimated net value of fertilizer business transacted by farmer cooperatives in 1952-53 was \$216,207,000, according to a recent report by the U.S. Department of Agriculture.

The net value of insecticide business during the same period was \$23,987,000.

Neither figure includes wholesale business of farm supply cooperatives with other cooperatives or terminal market sales for local associations.

Total memberships in farmer cooperatives have reached a record 7.5 million, according to the report. The 7.5 million memberships represent some 3 million individual farmers, many of them belonging to more than one cooperative.

The number of cooperatives showed a small drop—10,114 in 1952-53 compared with 10,166 the preceding year. The loss occurred in marketing and service cooperatives largely because of consolidations. Farm supply associations showed a significant gain in number, accounting for one third of the total. They also moved up in their membership to 3.1 million, or more than 40% of the total.

The West North Central region—comprising Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska and Kansas—led in the number of associations with 3,975. These associations had memberships of more than 2 million and did a net business valued at more than \$2.4 billion.

John F. Thompson in New Monsanto Post

ST. LOUIS — John F. Thompson, St. Louis, has been appointed superintendent of maintenance and engineering services for inorganic manufacturing facilities of Monsanto Chemical Co.'s William G. Krummrich Plant at Monsanto, Ill., it was announced recently by H. F. Weaver, Inorganic Chemicals Division production manager.

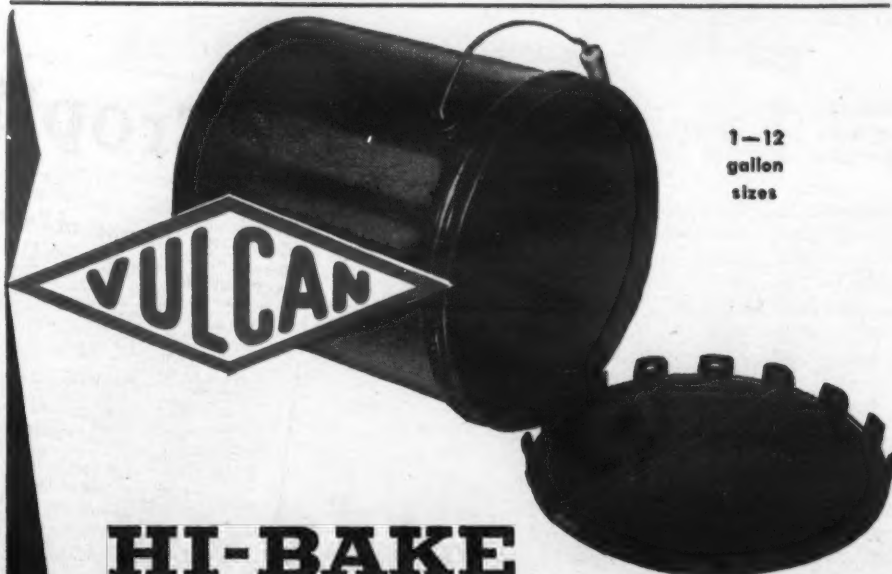
Now assistant manager of the process section of the division's engineering department, Thompson took up his new duties March 1.

A native of Atlanta, Ga., Mr. Thompson was graduated from Georgia Institute of Technology in 1942 with a B.S. degree in chemical engineering. He joined Monsanto in 1946, at the Anniston, Ala., research laboratory of the former Phosphate Division; was transferred to the division's Trenton, Mich., plant in 1947 and to the division's engineering department at Anniston in 1951, becoming an assistant chief chemical engineer in 1953. He was appointed to his present post in July, 1954.

During part of 1951 and 1952, Mr. Thompson served as an engineering representative of Monsanto to the de Nora Impianti Electrochimici organization in Milan, Italy.

Cotton Supports

WASHINGTON—The U.S. Department of Agriculture has announced the minimum level of price support for 1955-crop upland and extra long staple cotton. The minimum level of support for upland cotton, basis Middling $\frac{7}{8}$ -in., will be 31.70¢ lb., gross weight. The minimum level of support for 1955-crop extra long staple cotton will be 55.20¢ lb., net weight.



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At Soil Improvement Meeting

Scenes from the recent meeting of the Middle West Soil Improvement Committee meeting held in Chicago are shown in the accompanying photos. A full report of the meeting appears on page 1 of the Feb. 28 issue of Croplife.

In the top photo are most of the speakers who appeared on the two-day program. They are, from left to right, back row, E. R. Duncan, Iowa State College; R. L. Cook, Michigan State College; Robert A. Olson, University of Nebraska; Floyd W. Smith, Kansas State College; M. B. Russell, University of Illinois; Stanley A. Barber, Purdue University, and O. J. Attoe, University of Wisconsin; front row, John MacGregor, University of Minnesota; John Falloon, University of Missouri; Paul M. Burson, University of Minnesota; Richard M. Swenson, Michigan State, and John R. Webb, Iowa State. Absent from the photo are Dr. Russell Coleman, president, National Fertilizer Assn., Washington, D.C.; H. J. Mederski, Ohio State University, and E. B. Norum, North Dakota Agricultural College.

The second photo shows the head table at a press luncheon. From left to right are Dr. M. H. McVickar, National Fertilizer Assn.; Garth Volk, Ohio State University; Zenas H. Beers, MWSIC secretary; H. S. Vorhes, Virginia-Carolina Chemical Corp., MWSIC president; and F. W. Smith, Kansas State College.

The third photo shows, left to right, Warren Huff, Ashcraft-Wilkinson Co.; H. H. Tucker, Standard Oil Co. of Ohio; A. F. Arnell, Shell Chemical Corp.; Joseph C. Sharp, Spencer Chemical Co.; H. J. Coleman, Standard Oil Co. of Ohio, and M. H. Straight, Spencer Chemical Co.

In the fourth photo are Dr. Al Bowers, Swift & Co.; William T. Dible, International Minerals & Chemical Corp., and M. K. Miller, Tennessee Corp.

The fifth photo shows R. H. Linderman, International Minerals & Chemical Corp.; Dean R. Gidney, U.S. Potash Co.; A. H. Fahrenkrog, Illinois Farm Supply Co., and Ray E. Sorenson, Grinnell, Iowa. (In background, between Mr. Gidney and Fahrenkrog, can be seen Dr. Wm. Martin, University of Minnesota.)

In the sixth picture are Dr. Russell Coleman, president, National Fertilizer Assn.; Dr. O. J. Attoe, University of Wisconsin, and Dr. L. F. Puhr, South Dakota State College.

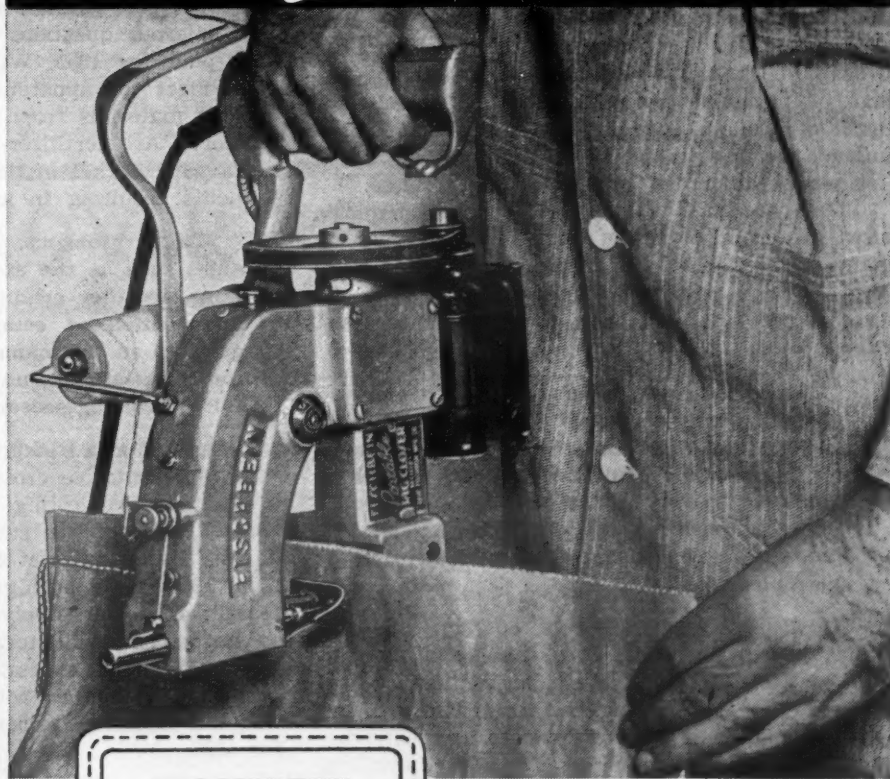
The seventh photo shows Z. H. Beers; George N. Hoffer, Olin Mathieson Chemical Corp.; Dr. Vincent Sauchelli, Davison Chemical Corp., Division of W. R. Grace & Co., and George Barclay, MWSIC.

In the lower photo are C. E. Workman, Virginia-Carolina Chemical Corp.; Tracy Adcock, Swift & Co., and Kirk Wagenseller, Swift & Co. The lower three photos are courtesy of the Middle West Soil Improvement Committee. Problems stressed at the meeting, which attracted a record-breaking attendance of more than 500, included the timing and placement of fertilizer, minimum fertilizer grades for the Midwest and the use of plant food as a tool to cut down crop surpluses.

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The rotational circulation of this issue is concentrated in the Midwestern states.

ECONOMIC REPORT

Pest Control Well Worth Its Cost

A summary of the amounts of money spent on pest control in agriculture has just been published by two U.S. Department of Agriculture experts in "The Agricultural Situation," monthly publication of the Agricultural Marketing Service. The authors, Paul E. Strickler, Production Economics Branch of the Agricultural Research Administration and Harold C. Phillips, Field Crops Statistics Branch, Agricultural Marketing Administration, describe the contest between man and his insect enemies, in their article.

Prominent among the enemies that reduce yields and make agricultural production less profitable are the hordes of insects, the hundreds of plant diseases and the weeds.

Expenses involved in coping with these agricultural pests are tremendous. The authors report that in 1952, a big year for infestations, the cost to farmers for spraying and dusting crops, livestock, and buildings was a quarter billion dollars. This figure is in addition to charges for the farmer's own labor and equipment.

"Just how much farm production was saved and what threats to national welfare were eliminated by these control measures is not known," the authors state. "But the story of the extent and cost of what farmers did in a recent year in their battles with farm pests has now been put together in statistical form.

According to a study by the ARS and AMS, the acreage treated one or more times for control of insects, diseases, weeds and brush in 1952, was more than one-sixth of the combined acreage of principal crops harvested. It reached a total of around 60 million acres. Cotton treated mainly for insects and small grain crops treated for weeds, amounted to half of this acreage.

Time was, the article states, when chemicals used for crop protection were applied either by hand or by manually operated equipment. Before this, farmers were often forced to abandon the growing of some crops in areas of severe pest infestation.

"Once improved effectiveness is demonstrated, newly-developed pesticides move quickly from trial and testing to common use," the article continues. "Highly mobile ground equipment and use of airplanes have speeded application of the chosen pesticides. Under most conditions, effective control is accomplished.

"Until recent years, crops of high per acre value, principally fruit, cotton, vegetables, potatoes and tobacco, accounted for practically all of the spraying and dusting on farms. But with improved equipment and more effective pesticides, together with higher prices for farm products, farmers have found it profitable to treat important acreages of crops of relatively low per acre value.

"To treat 3,460,000 acres of tree fruits, nuts and small fruits, farmers in 1952 spent \$63 million. Cotton was the most extensively treated crop for the control of insects. Over 13 million acres were treated at a cost of \$64 million."

A comparative study of how much of this application work is done by the farmer himself and how much is done by custom operators was also made. "On most crops, spraying and dusting materials were applied mainly by farmers with their own, borrowed, or exchange equipment," the article states. "Practices varied considerably among areas and among crops.

"The number of treatments required for ef-

fective control varied widely. For example, in some areas, one treatment on potatoes was usually sufficient, while in others, up to 20 treatments were used. Many fruit orchards received at least 10 applications to control insects and diseases.

The control of weeds and brush contributed a good share in the over-all activity, the report states. "Since 1940, the use of many chemicals and specialized equipment for their application has been of increasing aid to farmers in their fight against weeds and brush. In areas where airplane equipment could be used, hundreds of acres of small grain or pasture land have been treated in a matter of minutes.

"In 1952, more than 31 million acres of crops and land were treated for control of weeds and brush at a cost of \$48 million. Small grain crops and corn represented about 85% of the area treated.

"Even with the large expenditures shown, pests give little indication of discouragement. On the contrary, new ones present themselves, keeping men in both agriculture and industry busy tackling new problems. Thus the contest continues without letup."

Pesticide Survey Speaks Out

With the agricultural trade in its annual spring convention at St. Louis this week, national attention is being focused on the pesticide industry. People of the trade itself are finding this a time of self-appraisal and re-orientation as they face the rigors of a new season.

Numerous questions are in the minds of all who plan for 1955. Will the supply of insecticides meet the apparent demand? Is the carry-over of materials from last season too large for comfort? Are fertilizer-pesticide mixtures creating a new market in the trade? Are acreage allotments resulting in smaller volume of sales?

These problems, plus other imponderables such as the extent of insect infestations, weather conditions and the possible introduction of competitive products, all gang up on the manufacturer and formulator of insecticides until his job of planning for the coming season is a major project.

With this as a background, Croplife has mailed to a representative cross-section of the industry, a questionnaire asking about the prospects for 1955. Results of this survey, reported on page 1 of this issue, indicate that the carry-over stock from 1954 is not as big a problem as many had feared; that the supply of pesticides this year, so far as can be determined at this time, will be ample but not excessive; that the current program of acreage reduction on a national scale will not cause cutbacks in pesticide production for 1955.

Extra business from fertilizer-pesticide mixtures is not regarded as likely to cut much of a figure this year and the buy-early program for pesticides is reported as failing in many parts of the country.

It is safe to say in summary, that all those who replied are in agreement on one thing . . . that the pesticide industry is moving ahead and that many of the current problems are being licked. It will take time of course, and a "perfect" industry may never evolve; but it is encouraging to be reminded once more that behind the industry are men of real courage and stature, with lots of foresight. That plenty of the latter is required to cope with the peculiar problems of the insecticide industry, goes without saying. The fortunate thing is, that the industry does possess this asset.



CROPLIFE is a controlled circulation journal mailed to those responsible for the production and distribution of fertilizer and other farm chemicals and to retail dealers of the agricultural chemical industry in the U.S. To those not on the controlled list, CROPLIFE is available at \$5 for one year, \$9 for two years (\$8 a year outside the U.S. and possessions). Single copy price, 25¢.

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MEETING MEMOS

March 3-9—Idaho Plant Food Meetings, Sponsored by the University of Idaho; Couer d'Alene, March 3; Lewiston, March 4; Boise, March 7; Twin Falls, March 8; Idaho Falls, March 9.

March 7-9 — National Agricultural Chemicals Assn., Spring Meeting, Chase and Park Plaza hotels, St. Louis. Lea S. Hitchner, Associations Bldg., 1145 19th St. N.W., Washington, D.C., Executive Secretary.

March 8-9—Western Cotton Production Conference, Hotel Westward Ho, Phoenix, Ariz.; National Cotton Council, P.O. Box 18, Memphis 1, Tenn.

March 14-15 — National Nitrogen Solutions Assn., First Annual Meeting, Paxton Hotel, Omaha, Wayne R. Johnson, Box 163, Shenandoah, Iowa, president.

March 22-24—National Farm Chemurgic Council, Inc., Annual Conference, Deshler-Hilton Hotel, Columbus, Ohio; John W. Ticknor, NFCC, 350 Fifth Ave., New York, conference chairman.

March 24-25—North Central States Branch, Entomological Society of America, East Lansing, Mich.

Apr. 26 — Third Annual California Fertilizer Conference, sponsored by the Soil Committee, California Fertilizer Assn., University of California, College of Agriculture, Davis, Cal., Sidney H. Bierly, Executive Secretary, CFA, 475 Huntington Drive, San Marino, Cal.

May 19—Fertilizer Section, 25th Annual North Carolina Safety Conference, Robert E. Lee Hotel, Winston Salem, N.C.; William C. Creel, Safety Director, Department of Labor, State of North Carolina, Raleigh, Chairman.

June 2 — South Carolina Fertilizer Meeting, Sandhill Experiment Station, near Columbia, S.C.

June 3—Fertilizer Section, Virginia State Safety Association, Jefferson Hotel, Richmond, Va.; William C. Richardson Southern States Cooperative, Richmond, Chairman.

June 12-15—Joint meeting, American Plant Food Council, Inc. and National Fertilizer Association, Greenbrier Hotel, White Sulphur Springs, W.Va. Paul T. Truitt, American Plant Food Council, 910 17th St. N.W., Washington, D.C., in charge of registration.

June 28-30 — Sixth Annual Pacific Northwest Plant Food Assn. Regional Fertilizer Conference, Boise Hotel, Boise, Idaho, Leon S. Jackson, 702 Lewis Bldg., Portland, Ore., secretary.

Aug. 15-19 — American Society of Agronomy and Soil Science Society of America, University of California, Davis Campus.

Sept. 7-9 — Ninth Annual Beltwide Cotton Mechanization Conference, Texas A&M College, National Cotton

ton Council of America, Box 18, Memphis 1, Tenn.

Oct. 17-18 — Fertilizer Section, National Safety Congress, LaSalle Hotel, Chicago, Thomas J. Clarke, Chairman.

Nov. 2-3 — Annual Convention, Pacific Northwest Plant Food Assn., Pilot Butte Inn, Bend Ore., Leon S. Jackson, 702 Lewis Bldg., Portland, Ore., Secretary.

Nov. 7-8—California Fertilizer Assn., Thirty Second Annual Convention, Hotel Mark Hopkins, San Francisco, Sidney H. Bierly, Executive Secretary & Manager, 475 Huntington Drive, San Marino, Cal.

Dec. 5-7—Agricultural Ammonia Institute, Kansas City; Jack F. Criswell, Executive Vice President, Claridge Hotel, Memphis, Tenn.

Texas Fertilizer Sales Increase 15% in Last Half of 1954

COLLEGE STATION, TEXAS — Sales of commercial fertilizer in Texas were 15% higher the last six months of 1954 than in the same period of 1953. July through December sales totaled 212,884 tons, according to Dr. J. F. Fudge, state chemist.

Sales of materials, particularly normal superphosphate, continued a decline while mixed fertilizers showed a significant increase for the period, Dr. Fudge said in a semi-annual report of all fertilizer sold in the state.

Consumers bought 63% more mixed goods than in 1953. Notable changes also occurred in the relative importance of the various mixed grades. Tonnage of 5-10-5 sold was three times greater than the previous year, and 10-20-10 sales were six times above 1953 figures. Much smaller were sales of 0-1-1 (0-12-12 and 0-14-14) and 0-2-1 (0-16-8).

East Texas, North Central Texas and Gulf Coastal region sales accounted for 86% of all mixed goods distributed in the state, with 57% going to East Texas. West Texas used two thirds of all anhydrous ammonia and about four fifths of all nitrogen solutions distributed.

O. W. Kromer Co. Names Eastern Representative

MINNEAPOLIS—The O. W. Kromer Co., 1120 Emerson Ave. N., Minneapolis, has announced the appointment of Harry S. Fuller as sales engineer for eastern U.S.

Mr. Fuller, who resides in Minneapolis, was Kansas City manager for the Chrysler Corp. for 14 years before he became a Chrysler dealer in Southern Minnesota in 1950.

One of his duties in contacting eastern distributors and dealers is to educate them on the farmers' needs for crop spraying, fertilizer application and seed treatment, the firm said.

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Agricultural Chemicals Division, Pittsburgh Coke & Chemical Co. 16	Fischbein, Dave, Co. 37	Pennsylvania Salt Manufacturing Company of Washington 2
Agricultural Chemical Equipment Co.	Frontier Chemical Co.	Chas. Pfizer & Co., Inc. 7
Allied Chemical & Dye Corp., Nitrogen Div. 18 & 19	Gandrud, E. S., Co.	Phelps-Dodge Refining Corp. 35
American Potash & Chemical Supply Corp. ...	Gelgy Agricultural Chemical Co. 9	Phillips Petroleum Company 10
Anco Manufacturing & Supply Co. 30	Grace Chemical Co. 29	Pittsburgh Coke & Chemical Company, Agricultural Chemicals Division 16
Ashcraft-Wilkinson Co. 4	Grand River Chemical Div., Deere & Co. 22	Potash Company of America 3
Bagpak Division, International Paper Co.	Hahn, Inc. 29	Powell, John & Co., Inc. 28
Baker, H. J., & Bro.	Hammond Bag and Paper Co. 39	Private Brands, Inc.
Baughman Manufacturing Co.	Henderson Mfg. Co.	Rapids Machinery Co. 31
Beaird, J. B., Company 33	Hercules Powder Co. 40	Savage, K. E., Co.
Bemis Bro. Bag Co. 6	Highway Equipment Co.	Schrock Fertilizer Service 39
Bradley & Baker 39	Hills-McCanna Co.	Shell Chemical Corp. 5
Broadway Rubber Corp.	Hypro-Engineering, Inc.	Specifide, Inc.
Burrows Equipment Co. 8	International Minerals & Chemical Corp. 13	Spencer Chemical Co. 27
Butler Manufacturing Co. 21	International Paper Co., Bagpak Division	Stoker, H. S., Company 34
Calcium Carbonate Co.	K. B. H. Corporation, The	Tennessee Corp.
California Spray-Chemical Corp. 27	Kay Enterprises	Thompson-Hayward Chemical Co. 23
Campbell, H. D., Co. 34	Kraft Bag Corporation 12	Union Bag and Paper Corp.
Chase Bag Co.	Lion Oil Co. 25	United Petroleum Gas Co.
Chemical Specialties	The Mackwin Co. 32	U.S. Industrial Chemicals Co.
Chipman Chemical Co. 31	Markley Laboratories, The 13	United States Potash Co.
Clover Chemical Co.	Wilson & George Meyer & Co.	U.S. Rubber Co., Naugatuck Chemical Div. ... 14
Commercial Solvents Corporation	Michigan Chemical Corporation 11	United States Steel Corp. 15
Croplife 36	Midstate Machinery Co.	Velsicol Corporation
Deere & Co., Grand River Chemical Div. 22	Naugatuck Chemical Div., U.S. Rubber Co. ... 14	Virginia-Carolina Chemical Corp. 20
Diamond Alkali Company	Nelson, Edward S., Ltd.	Vulcan Stamping & Mfg. Co. 35
Doane Agricultural Service 34	Nitrogen Div., Allied Chemical & Dye Corp. 18 & 19	Vulcan Steel Container Co.
Douglas Chemical Co.		

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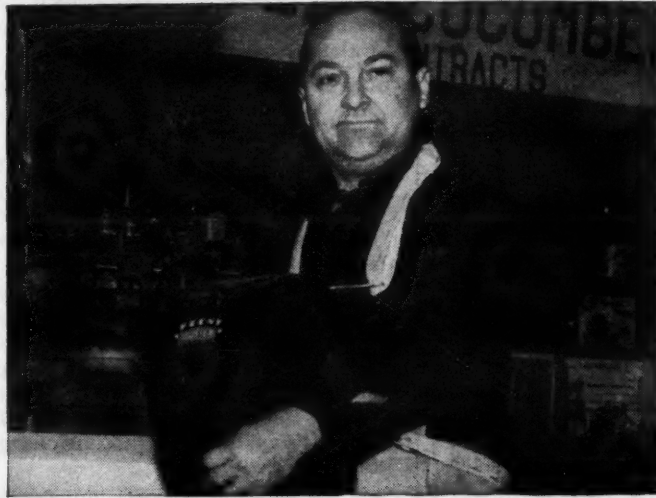
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